

Greater Motoring Economy MOTOR OWNER

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MODICAL PUBLISHING CO.



GOODRICH *Safety Tread* TYRE

The Tyre that made motoring safe

THE B.F. GOODRICH CO., LTD., 117-123 GOLDEN LANE, LONDON, E.C.

Page i



Hupmobile

"A thing of beauty
is a joy for ever".
That indescribable
something which
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each of us is present
in every line of the
Hupmobile.

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The Light Car De Luxe

THE 10-30 h.p. Alvis Light Car is extremely fast, luxuriously comfortable, exceptionally smart and distinctive. The Alvis owner has always cause to be proud of his purchase. The Alvis is without doubt the car for the connoisseur.

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Four Seater	-	-	-	£720
Coupé	-	-	-	£780

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HUDSON
Wheel base 10 ft. 5 in.
Wheel size 880 x 120

PRICE
£950
Extra for wire wheels
£45

ESSEX
Wheel base 9 feet
Wheel size 815 x 105

PRICE
£740
Extra for wire wheels
£40

Closed and open
or write for cat

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Middlesex, Herts, Essex, K

Page iii



Hudson Super-Six and Essex Four IMMEDIATE DELIVERY



Shaw & Kilburn, Ltd.

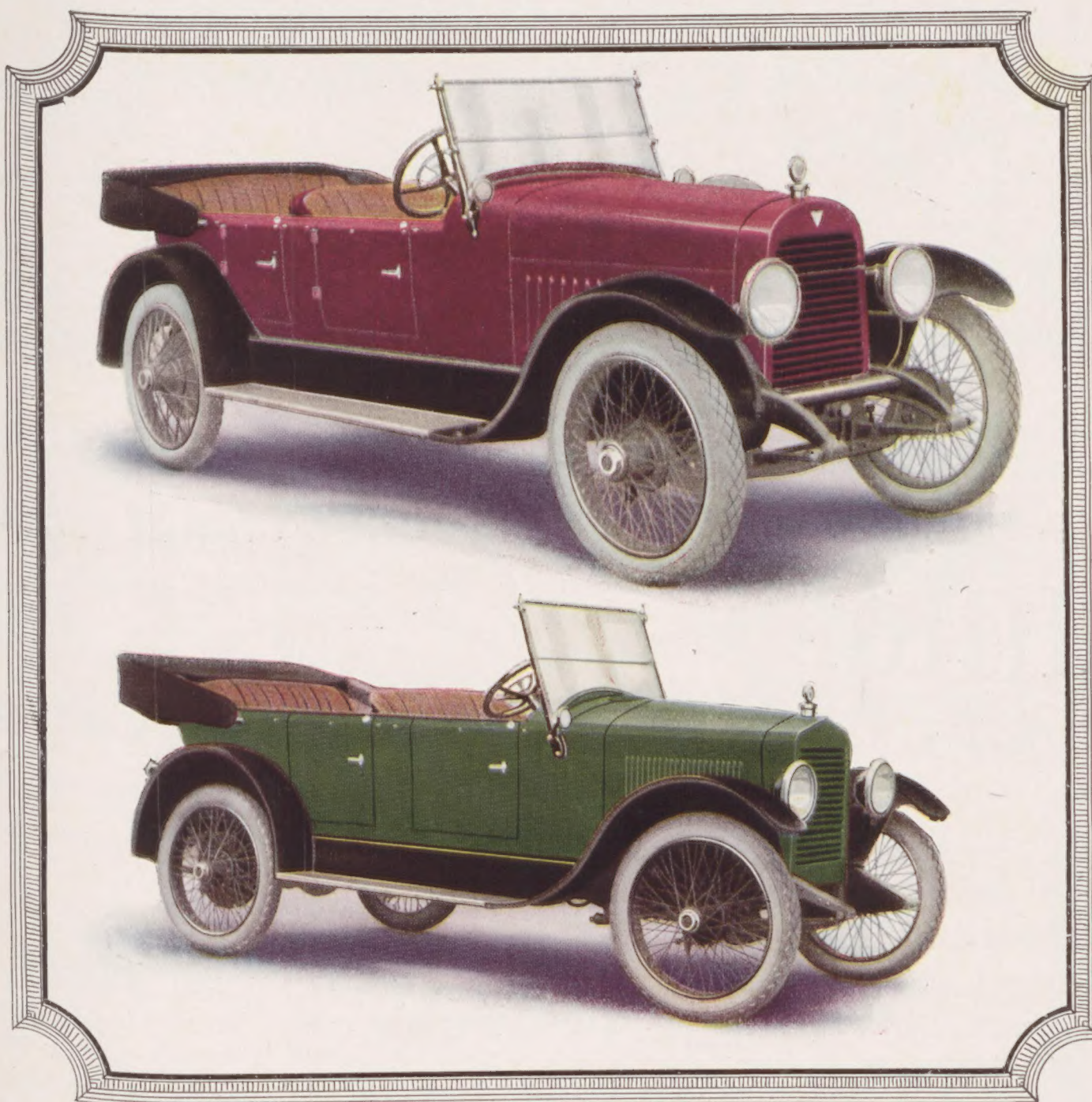
HUDSON

Wheel base 10 ft. 5 in.
Wheel size 880 x 120

PRICE

£950

Extra for wire wheels
£45



EQUIPMENT

Torpedo-body, electric lighting and starting, hood with cover and side curtains, folding wind-screen, five detachable wire wheels, Goodyear All-Weather tyres 880 x 120, flush-fitted instrument board with speedometer and gauges, Klaxon horn, and aluminium number plates.

EQUIPMENT

Torpedo-body, electric lighting and starting, hood with cover and side curtains, folding wind-screen, five detachable wire wheels, Goodyear All-Weather tyres 815 x 105, flush-fitted instrument board with speedometer and gauges, Klaxon horn, and aluminium number plates.

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Wheel base 9 feet
Wheel size 815 x 105

PRICE

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Extra for wire wheels
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12 H.P. 4-cyl. Engine
3-Speeds Self-starter
Detachable Disc Wheels
Electric Lighting
2-Seated Car
complete
£550

*You may buy a car for less money
you cannot buy a cheaper car
The best is ultimately the cheapest*

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best in every detail**

**Best material
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Best finish** } **Best results**

*In most advertisements the car looks better than it really is
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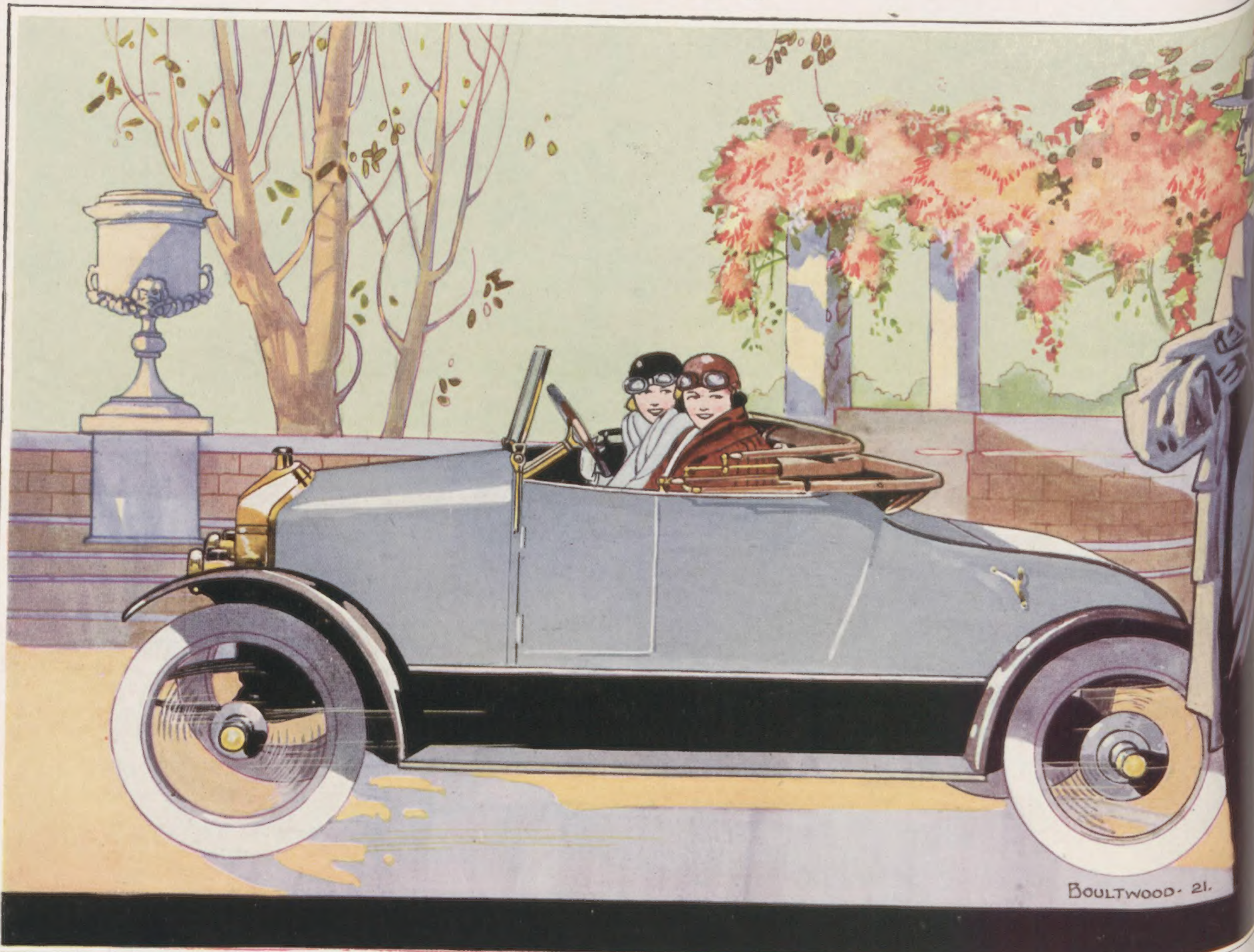
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8-9 h.p. Water Cooled.
2-3 Seater, complete with Lighting.
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I have had 5 Crouch Cars, all good, but each one better than the last. I went to Bognor on Sunday, climbed hills at 30 miles an hour, no skidding, no vibration, no rattles, engine silky, no tiring, brakes beautifully sweet, in fact a really enjoyable car. Petrol consumption 38 miles per gallon, under wintry conditions.

CROUCH MOTORS (1915) LIMITED

Registered Office & Works :

TOWER GATE WORKS, COVENTRY

Telephone—819 Coventry.

Telegrams—Crouch 819 Coventry

George Heath and the Motor Owner

The *Intending* Motor Owner:

As a discerning buyer, the man who intends procuring a Car will focus his attention upon makes of established reputation, and will look for the Agency which offers a comprehensive choice of such makes.

His primary needs are:

Sound technical advice.
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Service—and *continued* service.

I confidently assert the claims of George Heath (1920) Ltd. to meet these requirements.

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I repeat the claims of George Heath (1920) Ltd. that their organisation and staff of experts are unique in service—the continued service—available to the Motor Owner.

A
comprehensive
choice



George Heath

GEORGE HEATH (1920) LD.
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The only Motor
Spirit sold



BENZOLE

to a Guaranteed
Specification

THE National Benzole 10,000 miles certified R.A.C Trial has been pronounced by a Committee of Technical Experts the most meritorious performance of any certified trial under R.A.C official regulations for the year 1920 and awarded the 'Dewar' Challenge Trophy.

Now that you are paying your Car Tax on a
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that your Car is developing the full horse-power
you are paying for by using

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80 GALLONS of National Benzole will propel
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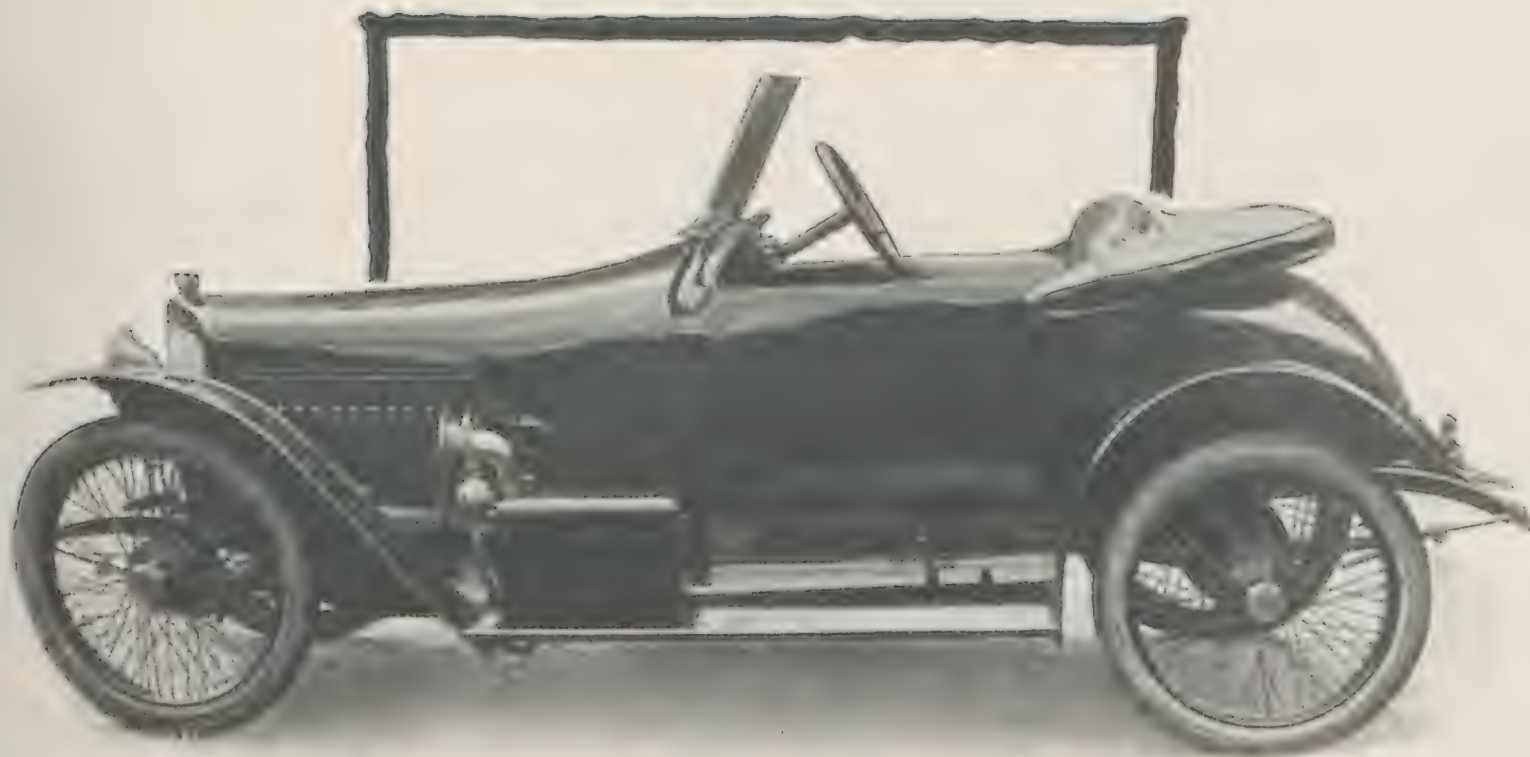
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10.4 H.P. 65mm/98mm

45 - M. P. H.

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20.1 H.P. 4 Seater	-	£1,450
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GIVE YOUR CAR THE BEST CHANCE *of* LONG LIFE —HAVE YOUR OWN GARAGE

A properly-equipped Motor House, as made in many styles and sizes by Boulton and Paul, of Norwich, will pay for its initial cost in a year or so by the money saved on constant unnecessary journeys backwards and forwards to a public garage—on garage charges—on the damage to fenders by neighbouring cars, to name but a few of the advantages.

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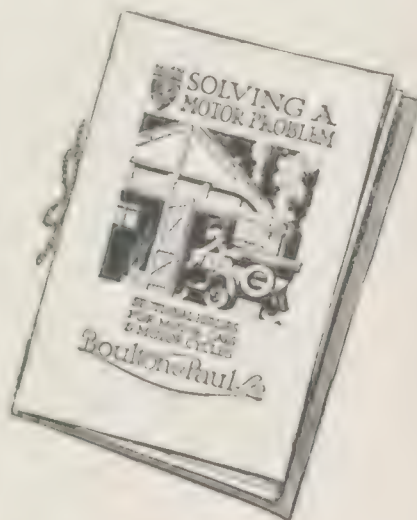
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SPECIFICATION of No. B204 MOTOR CAR HOUSE (AS ILLUSTRATED)

This Motor House is constructed of strong deal framing, mortised and tenoned. Roof covered with galvanised iron, lined with felt and match boarding. These Motor Houses can be ordered for early delivery. They are made in sections and can be easily erected by a handyman. Sizes from 15 ft. by 18 ft. to 24 ft. by 18 ft. Full specification and estimates on application.

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★ Is our latest catalogue of Motor Houses and accessories we have just had printed. Send for a copy, which we will forward by return at your request. It is an encyclopædia of everything pertaining to the protection of the car.



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Carburators out on 15 day
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FORTHCOMING ECONOMY TEST WE GUARANTEE TO INCREASE YOUR "MILES-PER-GALLON"!!!

THE WONDERFUL NEW
DEGORY NO-JET Carburetor
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THE REASONS WHY

1. The Fuel is better broken up, vaporised and atomised than with ordinary carburettors.
2. The Mixture obtained is much more even and constant.
3. "Popping back," "misfiring" and "bad functioning" are eliminated by reason of the perfect mixture.
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Send us the names of a dozen or so thousands of adepts of this new invention in all parts of the country. We will send you out on 15 days' trial, and should there be any cause for the amount for expenses. We think this is the best proof we can possibly give, but in addition to this we make a generous allowance for old carburetors taken in part exchange, and we Fit, Adjust, and Tune the Degory No-Jet Carburetor FREE to all motor vehicles that can be brought by appointment to our Garage and Works:—

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Make up your mind at once to save money, time and trouble, by obtaining full information of the extraordinary merits of this wonderful invention.

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for our handsome illustrated Brochure, and Expert, Official, Users' and Press Opinions of the advantages of the new patent DEGORY No-Jet Carburetor, which will be sent Post Free upon receipt of request.

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Page xii

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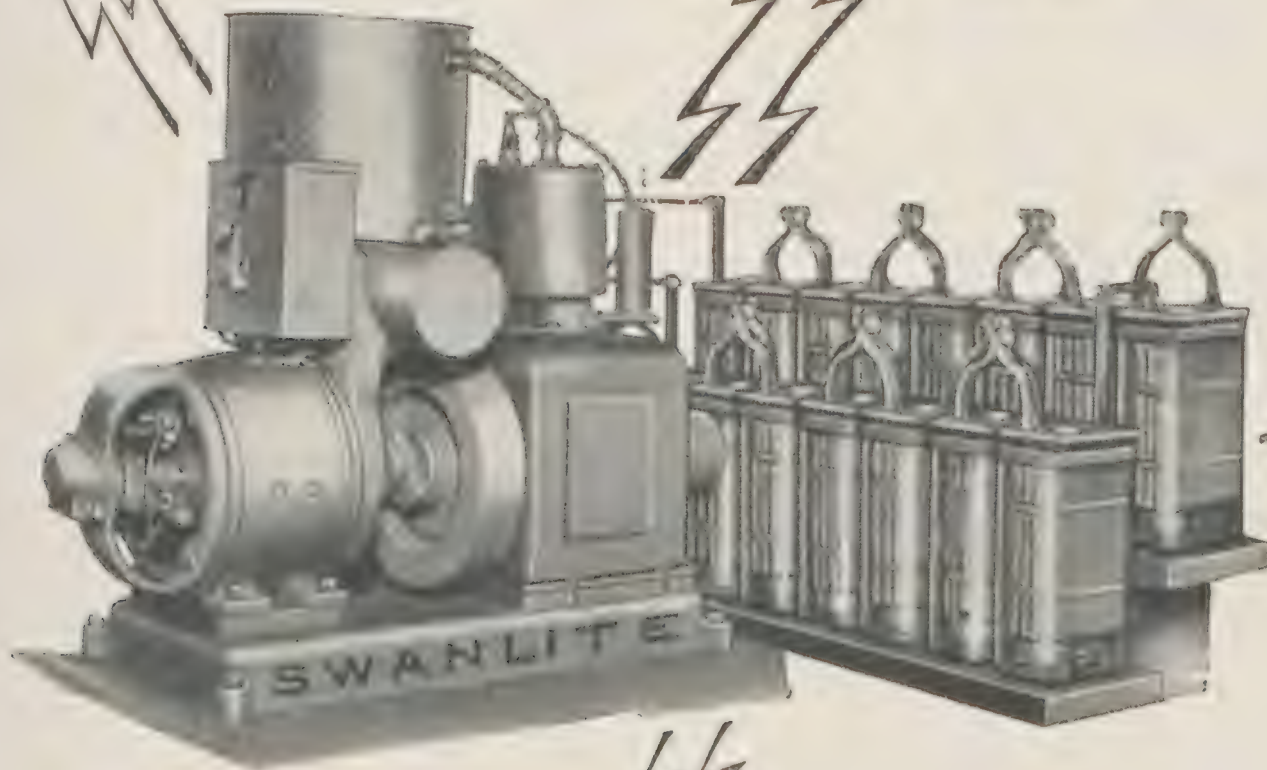
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A Present-Day Proof that Advertising Stabilises Trade

IT will not have escaped your notice that Nationally advertised branded goods do not figure among that great and varied mass of merchandise which is now being "sacrificed" in department stores and shops throughout the country.

The reason they stand immune from the present serious price *débâcle* is because the buying habits of the public, welded by enlightened Advertising, hold the demand steady and goodwill constant.

Advertising has achieved this much—but it could not have done so without the bedrock virtue of sincerity which underlies all successful advertising. If an article is not worth

the price asked, or if it is insincerely described by overstatement or inaccurate representation, the money spent on Advertising is utterly wasted.

Confidence is the basis of Goodwill. Goodwill is another name for Habit. When a manufacturer can implant confidence in his goods within the public mind his success is assured. For this, two things are essential—goods of a high *standard* quality—guaranteeable goods—and then wise, sincere Advertising.

Here, then, is your sure protection against the uncertainties of demand. Enlist the powerful aid of Advertising and stabilise your market.

THE HOUSE OF CRAWFORD stands for sincere Advertising—Advertising with a policy, a purpose and a plan. We invite you to consider the value of such a service as this house is organised to render, and to consult with us upon its application to your business.

W · S · CRAWFORD LTD
Advertisers' Agents and Consultants
CRAVEN HOUSE · KINGSWAY
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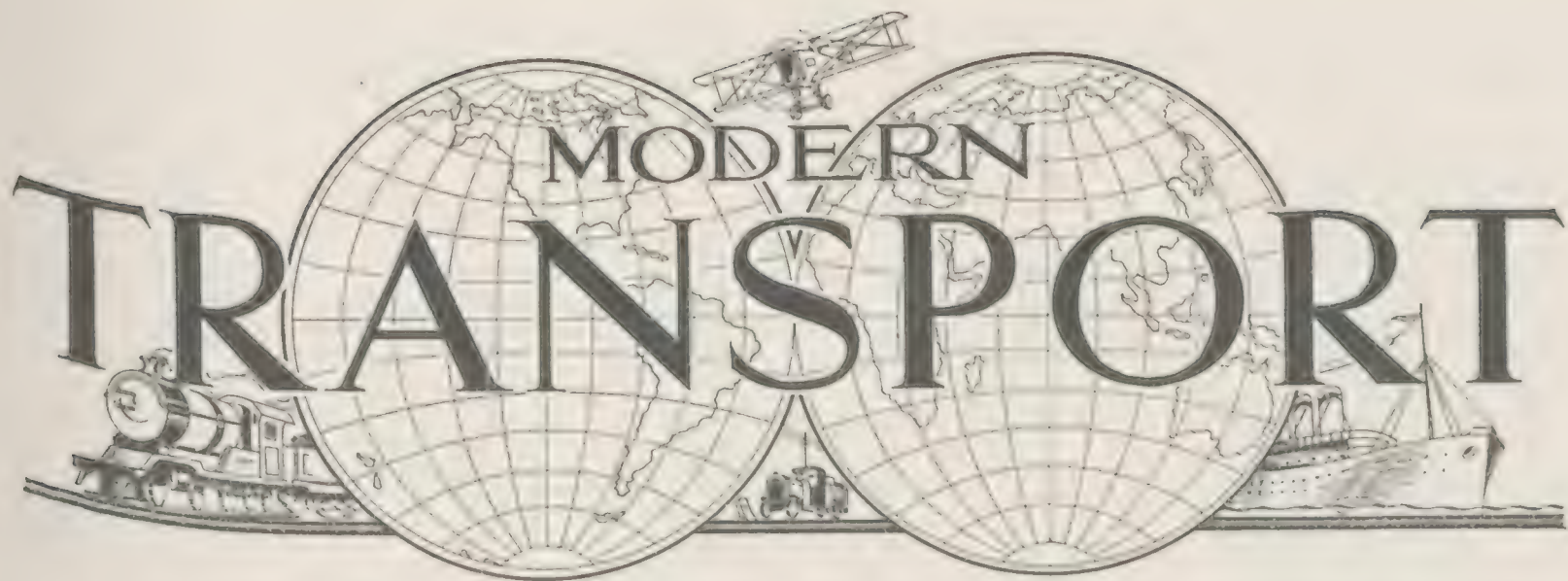
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Page xv



A Weekly Journal for all interested in Traffic by Land, Sea, and Air

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Haig & Haig Five Stars Scots Whisky

You will also know why it must cost you a little more than other Whiskies. There is more age, more Speyside Malt and more character than in other Whiskies. These qualities cost money, hence the higher price which must be charged when "control" is lifted.

¶ We are advertising only our EXPORT Bottle at present. The Government controls the price of Whisky so that there is a loss on every case sold in the Home Market

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MOTOR TYRES
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Send your worn tyres to

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3,000 miles guaranteed for the new
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SPECIAL PRICES for STEEL STUDDED TREADS

SPECIMEN PRICES:

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810 x 90 - £2 · 4 · 2	895 x 135 - £4 · 6 · 8
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The illustration shows the Almagam Mills Harpenden factory with several cars parked in front. A large, detailed retreaded tyre is shown in the foreground, with the words 'ALMAGAM RETREAD' visible on its sidewall. The factory has multiple chimneys and a large building with 'ALMAGAM MILLS' written on it.

A recent testimonial—

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"I feel it is my duty to you to inform you of the wear I am having from one of your retreaded tyres. It has travelled over 6,000 miles and is quite safe for another two or three thousand."

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Something entirely new in
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It is THE GREATEST MOTOR
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Made in Seven Models.

Plain Type.		Bird Ornament.		Bells with Lights.	
No.	Price.	No.	Price.	No.	Price.
5" x 5" 57	£3 3 0	5" x 5" 54	£4 4 0	5" x 5" 51	£5 5 0
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Special Model for Light Cars, Fords, etc.
4" x 4½" No. 50 £3 3 0

Uses less than one-fifth the current necessary to operate a horn.
The electrical parts are fully protected against dampness, dust and
injury, and will stand up under long continuous automobile service

Fully illustrated descriptive Folder upon request.

THE "Liberty" BELL COMPANY,
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Patent: Dec. 1st, 1908. June 26th, 1917. June 8th, 1915.
Trade Enquiries Invited.

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TRUE ECONOMY

is economy on all points.

THE COX "ATMOS"

Carburetter is designed to give all-
round economy, not merely on fuel
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MADE for all TYPES of MOTOR VEHICLES

Write for interesting descriptive book-
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9/95, PITT STREET.



Winter is not "the season of our discontent" when we travel in a Packard Twin-Six. Travel by PACKARD to anywhere and get *real* first-class comfort at less than first-class fares. The TWIN-SIX PACKARD is the ideal car for inexpensive luxury motoring. 1921 models include right-hand steering and the finest English coachwork. It will pay you to let us demonstrate the advantages of the TWIN-SIX—the luxury car with the low upkeep cost.

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 "The sensation of the Show, the French Wonder car,
 the 'Unic' Char-a-banc, is the centre of attraction
 for thousands of visitors to the Kelvin Hall."

Price complete £895 0 0

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No reduction in price

This is neither necessary nor possible since the Austin Twenty is already admitted by all motoring experts to be the world's best money value in high-grade cars. To avoid disappointment in delivery it is imperative that you book your order at once with your nearest agent, as with the advent of spring our output capacity already shows signs of being strained to its utmost to meet the demand.

of the famous

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il wrote :
French Wonder car
centre of attraction
Kelvin Hall."
complete £895 0 0

N. S.W.1

Page xxi

The Albert

The 11·9 Albert is a really economical Car

True motoring economy consists broadly in reasonable first cost, reasonable freedom from repair bills together with reasonable running costs and depreciation.

You get all these and more when you buy an 11·9 ALBERT Car.

Comfort and Reliability—35 m.p.g. and over—

The 11·9 h.p. ALBERT is manufactured by Messrs. Gwynne's Engineering Co., Ltd., of Chislehurst, Hammersmith, and Vauxhall, London.

6-8000 miles on one set of tyres, are the main factors which make the ALBERT the most economical car for a man of moderate income.

Investigate the economy claims of the 11·9 ALBERT—you will find them well founded.

An 11·9 ALBERT will be placed at your disposal for this purpose at any time you may appoint.

We are now able to give Immediate Delivery of 2 seater, 4-seater, and Coupé Models, also our Standard Chassis. Terms can be arranged.

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Telegrams: "Serviceco, Phone, London."

Telephone: Mayfair 27 and 3026.



The STITCH-IN-TIME MOTOR SERVICE

for Owner-drivers

**The more you motor
the better it pays you**

It is impossible to foresay exactly by how much the "Stitch-in-Time" Motor Service will more than pay you for its cost, or to state finally the number of ways in which it will save your time and your trouble. You can judge better by the experience of others—

In the following instance you have the experience of an owner-driver who had heard of the "Stitch-in-Time" Motor Service, but considered it a luxury.

For a short time he remained unenlightened, until one day when he called at a "Stitch-in-Time" Motor Service Depot and ordered a new pair of tyres.

He ordered a larger and more expensive pair than those fitted by the makers of the car.

The 'old' pair had the miserable total of 500 miles to their credit. They were tyres of a very reputable make—so reputable, in fact, and so astonished at them were we, that a "Stitch-in-Time" Motor Service inspector was sent along to examine them.

He was met with an account of every kind of tyre trouble that could possibly happen to tyres. Among them the most expensive and dangerous being frequent burstings and skiddings, and a continual, sickening roiling of the car.

The examination and diagnosis of the whole trouble took no longer than time enough to glance at the tyres.

They were suffering from being kept constantly under-inflated.

No new tyres were necessary. The owner was told this, and his order for the new and more expensive tyres returned to him.

And his saving was enough to pay for "Stitch-in-Time" Motor Service fee for a period of more than

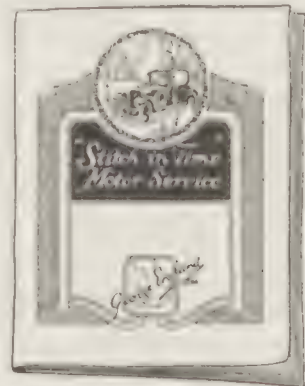
two years. So, naturally, he enrolled immediately.

Now, there is nothing big or extraordinary about this instance—it is just one of the day by day series of savings effected by the "Stitch-in-Time" Motor Service—savings which are merely one of the methods by which this Service more than pays for its small cost per annum.

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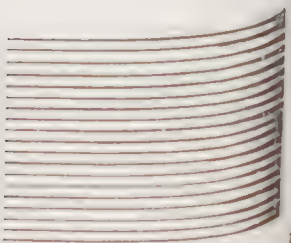
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Page 221

WHAT IS THE BEST CAR OF THE YEAR?

Mr. W. H. Berry, the well-known Motoring Writer, said, in an article which recently appeared in the "Daily Despatch": "Here we reach the problem of what is the best car of the year. Taking everything into consideration, factory, service, design and material used, I have no hesitation in casting my vote for the 16 h.p. TALBOT-DARRACQ (4 cylinder)"

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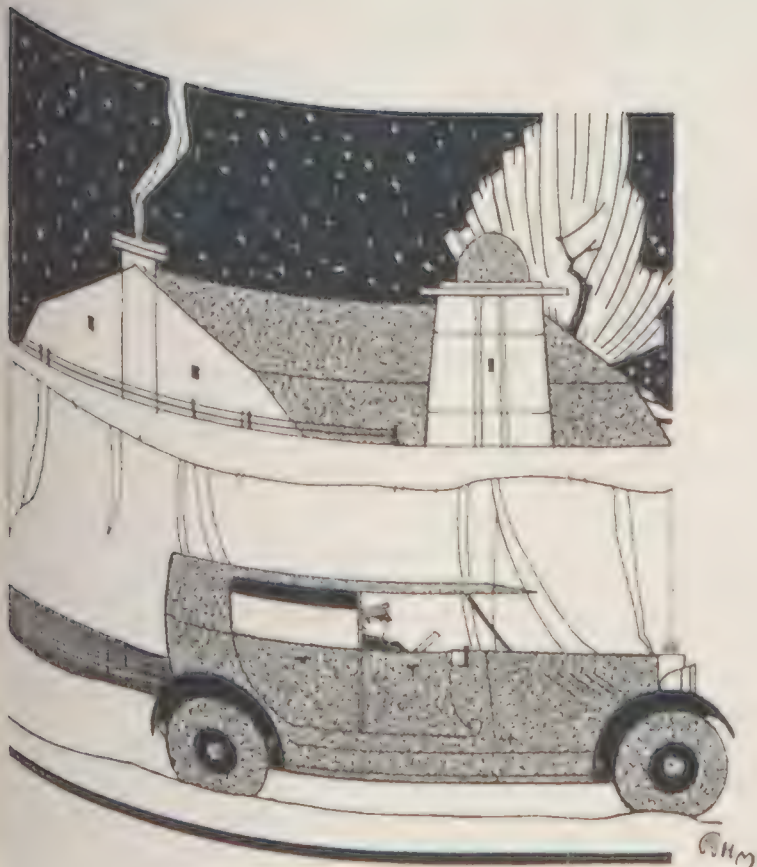
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1921

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Photo. by "The Motor-Owner."

A Study in Light and Shade.

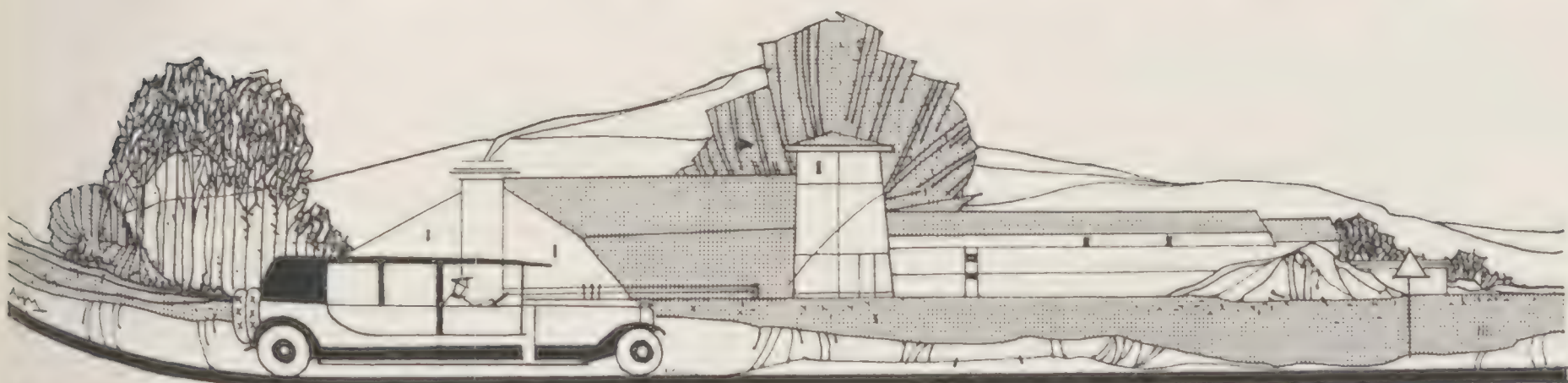
Sunshine and dry roads, with an occasional shower "to lay the dust"—dare we hope to have these blessings with us again soon?



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The MOTOR-OWNER



NATIONAL IMPORTANCE OF EFFICIENT ECONOMY.

THE study of economy is a national necessity, and therefore, while we appreciate the general favour with which our fuel economy campaign and the announcement of the R.A.C. test has been received throughout the country, we look upon that favour rather as a wise recognition of the necessity than as a compliment to the Royal Automobile Club and ourselves. Primarily, the question at issue is the more economical running of the "pleasure" car—which, incidentally, has long since ceased to deserve the, shall we say, stigma; there are very few cars in use for purely pleasure purposes, very few, indeed, of which the major employment is not in connection with business in one form or another. But it does not require much imagination to visualise the application of any discoveries that may be made in the course of the R.A.C. test in a much wider field—the field of national endeavour.

"THE ECONOMY OF ECONOMY."

Economy in the running of motor vehicles—be they pleasure cars or be they lorries—does not end in that local advantage. As Captain de Normanville points out on a later page, economical running is reflected in the increased prosperity of the owner's firm and in his business dealings. It spreads to that firm's clients and customers, and to their clients and customers—and so on, in ever-widening circles. The immediate results of the R.A.C. tests may be small in themselves, but their cumulative effects will be of national importance. That is the view-point from which we regard this thorough attempt to discover the best means of securing

efficient economy, and that is the aspect which we wish the public to consider.

With regard to the conditions of the National Fuel Economy Trial, the Royal Automobile Club is anxious that the test shall be as all-embracing as possible, and we have remained in doubt up to almost the last moment as to whether we should be able to include the regulations in this issue. Happily, however, we beg to draw the attention of readers to the supplement facing page 20.

THE MOTOR-OWNER AWARDS.

Following upon our previous announcement that THE MOTOR-OWNER would present first, second and third prizes in each of the 6 subdivisions of the Royal Automobile Club's National Fuel Economy Test, we are able to publish in this number illustrations of the actual cups. These cups, of which pictures will be found on pages 10, 11, 12 and 13 of the present issue, have been specially designed for us by Messrs. Mappin and Webb, Ltd., silversmiths to His Majesty the King, and we have little doubt that the fortunate winners will be as pleased with the effectiveness of their lines as we are ourselves. The cups are of an average value of 75 guineas, 30 guineas and 15 guineas respectively for the first, second and third prizes. *En masse*, as we have seen them, they make a particularly impressive display, and we have arranged with the designers for an exhibition of the cups in one of the windows of their Oxford Street showrooms from March 7th to March 12th, after which they will be exhibited at the Royal Automobile Club.

THE SPEED LIMIT QUESTION.

A revision of legislation that militates against the convenience, in one form or another, of automobilists does not seem difficult to secure. The proposition is made and, from the Treasury point of view, is approved; and the ponderous legal machine rolls on, despite all opposition, inevitably as the car of Juggernaut. It is, indeed, Juggernaut-like in its effect, except that it has no willing victims, but that is beside the point. As against the ease of restrictive legislation, we have the difficulty of securing a revision of the laws that might conceivably be of advantage to motor users. Automobilists, as individuals and in a body, have agitated for many years against the ineffective speed laws of this country, but without result. It has been urged time and again not only that twenty miles an hour is a ridiculously low limit, but that any hard-and-fast limit is both wrong in principle and unnecessary as a means of governing speed—unnecessary since driving in such a fashion as to endanger life or property is already provided for in another clause.

SOME ALTERNATIVES.

The question is now once again under discussion, and perhaps at last the strong feeling of the large body of motorists in the country will be recognised. There are two points of view, it seems—one that the limit should be abolished altogether, and reliance placed upon the "common danger" clause; the other that the limit should be raised to thirty miles an hour, and enforced. So long as police-trapping on safe stretches of road and the general persecution of harmless motorists are not again embarked upon, present conditions are not too bad; but if we are not content to let well alone, why confuse the issue? Is there a single reader of these lines who would be content never to exceed 30 miles an hour; and is it not an accepted fact that speed in itself is not necessarily dangerous? Let us stick to our guns. We object to the speed limit—not the 20-mile limit, but any limit.

COMPLETE ABOLITION?

We recognise that we must not drive in a dangerous manner; but what is the use of possessing a car capable of running comfortably and smoothly at 35 or 40 miles an hour if we

gratuitously state that we are willing to be fined if we are caught exceeding a speed of 30 miles an hour? All our cars will reach that speed with supreme ease, and, incidentally, a vehicle which had difficulty in doing so would be most unpleasant to drive. In order to drive comfortably below 30 miles an hour, therefore, we must have a car that is capable of exceeding it, and few are the owners who honestly guarantee to keep the pace invariably below the crucial figure. THE MOTOR-OWNER does not altogether care to advocate a policy of *laissez faire*; but, after all, we have little to complain of at the present moment, so far as the use of our cars on the road is concerned. If we must have a change, let us be honest to ourselves and the non-motoring public, and insist for the abolition of the speed limit.



PASSING STATIONARY TRAMCARS.

The proposal of a Northern Motor Corporation to make it illegal to overtake and pass a stationary tramcar on the near side of a recognised stopping place is being resisted by the Motor Legislation Committee. While we should be the last to encourage restrictive legislation in the ordinary course of events, this proposal—which, in the way, has been in force in the United States for a considerable period—seems so reasonable that we feel the Committee is rather wasting energy, and even risking the creation of a bad impression in opposing it. No considerate motorist would force his way through the confused and nervous crowd boarding and descending from a tramcar; it is, in fact, dangerous and driving to the common danger, anyway, a legal offence. But we have frequently seen how considerate drivers insisting, with blaring horn and racing engine, upon a right of way which is not morally theirs; and we have seen, likewise, the terror-stricken expressions on the faces of the huddled crowd. If it is necessary—and we are inclined to think it is vitally so—to prevent legally this transgression of a law of ordinary decency, we do not think a motoring organisation should offer resistance. On the other hand, all matters of traffic regulation should be uniform for the whole country; and it seems to us that this particular point is essentially one for the attention of the appropriate Central authority rather than of a purely local corporation.

THE ECONOMY OF ECONOMY.

The Incidence of Operating Costs on the Demand for Cars.
The Long Arm of Fuel Economy.—By CAPT. E. DE NORMANVILLE.

THE recent propaganda of THE MOTOR-OWNER relative to more economical motoring has been more effective than the most sanguine optimist could have anticipated. The gospel has spread from mouth to mouth, and is now being considered in every section of motoring interests. It is doubly gratifying to learn that manufacturers themselves are at last beginning to give closer consideration to this question. The recent world-wide stagnation in most commercial activities—shared of course by the motor industry—gives one to think. Serious though the problem was, there has been no one as yet capable of adequately explaining its ins and outs. This general difficulty in commercial undertakings is accentuated when one comes to consider the special incidence of the problem relative to the motor industry. I have made many inquiries in an effort to solve the problem. I am still groping for light. The motor car or motor vehicle can no longer be classed as luxury equipment—otherwise than as an exception. In the majority of cases it is a business asset to the business or professional man. Consequently it is not sound in logic to allege that the recent falling-off in demand is due to a relationship between the general financial stringency and the purchase of a luxury. We must seek a reason elsewhere.

IS IT OVER PRODUCTION?

Most people tell me that it is due to over-production. I have the temerity to differ—if differing differentially. I am prepared to admit that the recent potential output of the British industry for the home market could have resulted in over-production. I refuse to admit that over-production has been, or can be reached, for a long time to come. It is necessary at this juncture to understand one another in the interpretation of the phrase over-production. In the sense that we had recently a manufacturing capacity in excess of demand we *had* attained over-production. That, however, is an abnormal interpretation of the phrase, and to my mind is logically extraneous to the real issue. Over-production really means a production in excess of the requirements of potential purchasers. I refuse to admit the existence of anything of that nature, or anything approaching it. In the real meaning of the phrase there has been no over-production.

I am going to submit a theory to you. It is this. Recent reduction in demand is due mainly to the *high cost of operation*—not to satiation of demand, or even to high initial purchase price. There are still thousands of people and business houses who want motor cars or motor vehicles for the more efficient conduct of business. In the vast majority of cases they can find the necessary money for the initial outlay. It is, however, the annual upkeep charges that constitute the deterring factor. Every dam thing (excuse my language) is “up”—taxation, fuel, oil, tyres, insurance, garaging, and so on to the bitter end. Here, I claim, has been the curse of the situation. The potential business asset aspect of owning a motor is given a severe body blow by this off-setting curse. In the interests of the nation and its commerce the use of road transport media should be rendered as economic as possible. Here is our problem. It is this that we must solve. You may tell me that the theory appears far-fetched.

And you desire it, I will accept the statement. None the less it appears to me argumentatively tenable. Economy of operation does not end with economy of operation. That is the point I wish to bring home. Admitting it as a general thesis, it follows in logic that petrol economy does not end with petrol economy. Here lies the future value of the great economy propaganda scheme of THE MOTOR-OWNER. Here is the objective of the tests which it has organised in conjunction with the R.A.C. Here is a factor of great importance hidden under the shadow of partial obscurity.

If we can effect an economy in petrol or benzole consumption of, say, 15 per cent., we save roughly 6d. per gallon. In doing so we must not interfere with real, actual, and practical road efficiency. We may, if necessary, affect to a small degree what I may term “luxury” in driving. We must not, however, interfere with our practical road efficiency. Now that saving of 6d. a gallon—valuable though it be—is admittedly not of vital importance to an individual user. But the economy is not only direct. There is an economy of indirect incidence. The saving effected must automatically be reflected in tyre economy, oil consumption, wear and tear, and general upkeep expenditure. If the car or vehicle is used for business purposes, the aggregate of such economies will again have a reflex effect on the efficiency of that particular business, and yet again upon the other party with whom the business is being transacted. Yet again, a tertiary incidence to the primary economy will be correlatively reflected to yet another party, and so *ad infinitum*.

A BROAD OUTLOOK.

Thus when we come to take the logical outcome of a comparatively small initial economy, we find that it grows in effectiveness on the snowball principle. I am not suggesting that a stroke of the pen, or the dreamy visualisations of its “pusher,” can bring all this into being at a moment’s notice. Not at all. All we can hope to do is to set the ball rolling. Let us rouse ourselves from our preconceived ideas. We have demanded luxury, we have demanded wonderful acceleration, we have demanded everything else that titillates the palate of the almost subconscious animal instinct of joy in controlling power. As a national proposition we can no longer afford to pander to that instinct. For many years to come we have as a nation and as individuals to study economical efficiency. In just the same way as a shipping company studies economic speed in its sea transit; in just the same way as a locomotive engineer studies economic speed for his train with varying loads—so must we study economic speeds for road transport. This is the high ideal of THE MOTOR-OWNER and of the R.A.C. in inaugurating these National Fuel Economy Tests.

It would be childish to anticipate an immediate revolution as a result of the possibilities which will be demonstrated. That revolution must be gradual. One must start by concentrating attention on the subject and getting other people to give it the necessary thought. Our great study must be centred on economic efficiency as different from unnecessary luxury. That is the objective. It is ultimate rather than immediate in scope.

FOR AND AGAINST.

Further Press Comments on the National Economy Test.

SINCE the February number of THE MOTOR-OWNER went to press there have been very many additional references to the National Fuel Economy Test in newspapers and periodicals of all kinds throughout the kingdom, and as it was scarcely to be anticipated that never a word of adverse criticism would be written or spoken, the bulk of the opinion expressed has been remarkably favourable. Last month we quoted a mass of press comments which were congratulatory in the main; let us now see what people have to say against the scheme.

The *Queen* of January 15th, for instance, says:—

"A car manufacturer in these days of compulsory economy is not at all likely to fit a jet to his carburettors that will waste fuel. It is extremely likely that he will use the jet that will enable his engine to develop its full power and give the greatest degree of flexibility, for **he knows that any motorist will prefer to squander petrol, if necessary, rather than have a poor-pulling engine for hill work.**"

But that is just our point. The manufacturer will, and does, naturally fit the jet that gives the most efficient running. Our Brooklands demonstration showed that if one is prepared to sacrifice 2 per cent. of maximum speed one may obtain as much as 22 per cent. reduction in fuel consumption, even by the rough and ready methods of economy which we then adopted. And to say that "any motorist" will prefer to squander petrol, etc., is manifestly wide of the mark, since **there are many owners who in the current quarter are refraining from using their cars from motives of economy.** Is it not conceivable that if, by saving petrol, they could neutralise to some extent the increased taxation they might have found it possible to keep their cars in commission?

Then, again, the *Birmingham Post* of January 21st very truthfully remarked:—

"There are scores of thousands of people who are 'holding off' buying motor-cars because they are afraid of the running costs—and petrol to-day is the biggest item in the bill."

The latter part of that remark may be open to doubt, but it is an easily demonstrated fact that the petrol and tyre bills for a season's running are now more or less on an equality, and, barring very bad mechanical luck, they are certainly the two most serious items of running expenses. The point is, however, that the motor industry lacks many orders that it would be called upon to fulfil if the expense of motoring were reduced, **and at the present moment the motor industry wants all the orders it can get.**

We have shown how, by admittedly crude methods, one of the heaviest expenses can be reduced by 22 per cent.; and the Royal Automobile Club proposes to inquire exhaustively into the subject of fuel economy by means of the National Test.

The *Field* of January 15th issued a warning to novices against "over-enthusiasm for a starved engine":—

"Anything which would set in a vogue for thin mixtures," says that journal, "is to be deprecated. They may save fuel, but it is doubtful if they save money in the end, and they certainly rob motor driving of much of its pleasure. . . ."

Linked with this paragraph in effect is the comment of the *Commercial Motor* of January 18th. Referring to the Brooklands demonstration, that paper says:—

"That such a big increase can be obtained with but little trouble is proof of the great economy that could be effected if the whole of

the motor vehicles in this country were supervised in this respect. This gain in fuel can only be obtained at a loss of efficiency and flexibility."

The last sentence, it will be seen, tends to contradict the first. "But little trouble," if it means anything, means without difficulty in fitting and without serious loss of efficiency. The reply to this is the same as that given in the *Field*: Twenty-two per cent. economy was obtained almost haphazard at Brooklands with an insignificant loss of efficiency—so small a loss, in fact, that it would be unnoticeable in "robbing motor driving of its pleasure."

If we could obtain such a result as this in a casual experiment, surely we are not wrong in thinking that here is a profitable field for more careful experiment; neither is the R.A.C. wrong in believing that such an experiment is worth its while.

We feel no shadow of doubt on the question.

Any possibility of obtaining material fuel economy without serious loss of efficiency demands investigation.

And that investigation will be furnished by the National Economy Test.

There is a tendency to pin both the Club and ourselves down to "smaller carburettor jets" as the only means of securing economy within our purview. This simply means that the writers of such articles cannot have read either the R.A.C. or our own announcements with sufficient attention. It so happened that the use of smaller jets was the method adopted by us in our Brooklands demonstration, and the Club announcement naturally referred to the fact. And every operation or device which aims at economy will be tried out in the National Test, and **a device or method which secures great economy at the expense of a great loss of efficiency is very little likely to prove a winner.**

So far as carburettor jets are concerned, however, our comment in the *Western Press* of January 13th is interesting. That paper says:—

"Amongst the cheaper grade of cars it is a fact that after the first few hundred miles the fitting of a jet one or even two smaller is frequently called for, and will not only give economy in fuel but will quite conceivably lead to greater power, flexibility and general 'life.'"

This is a fact that has to be recognised, for everyone is not necessarily a fully-tested and run-in Rolls or Napier, and a car's a car, whether it come from Acton, Honolulu or Detroit. The warning that we would give to novices is that after they have run their American cars (especially) a few months they try the effect of fitting a smaller carburettor jet. Nine times out of ten they will have come to thank the *Western Press* for raising the point.

Whatever one's own personal opinions may be, there is no doubt, first, that very widespread interest has been aroused in the R.A.C. Test; and, second, that to the majority of motor-owners mere mention of the word "economy" is sufficient to secure their attention. And the results of the National Economy Test will undoubtedly justify us in giving them the call.

We cannot better conclude than with the following from the *Aberdeen Free Press* of January 14th:—

"At its present price petrol is a precious liquid, and every drop that can be saved must be saved. Consequently the economy test of the Royal Automobile Club come opportunely, and the results will be watched with interest."

SAVING PETROL.

Sir Eric Geddes on "A Factor of National Importance to British Industry."

IN discussing the action of the Royal Automobile Club in inaugurating on a large scale "National Fuel Economy Tests," Sir Eric Geddes made some very pertinent remarks in an interview. "The need for economy in fuel consumption," he said, "is a factor of national importance, embodying a direct effect on the future expansion of British industry. I have an unbounded belief in the future service to be rendered by road transport in Britain. The more economically efficient that transport can be made, the greater the impetus to commercial development. As transport costs diminish, so does the cost of food and almost every other commodity decrease. In regard to motor traction specifically, it is an unquestionable fact that hitherto both the public and manufacturers have concentrated attention on speed and acceleration achievements. With the cost of motor fuels standing where they do, it is of vital importance to give preferential consideration, both for passenger cars and commercial vehicles, to the question of economic speeds from the point of view of fuel consumption.

"In bringing this subject before the Royal Automobile Club, THE MOTOR-OWNER has initiated a movement which can readily prove of real national utility. The principle is well known in rail and sea transit. The economic speed in fuel consumption of each class of locomotive, or each type of ship, is a prime consideration of locomotive engineers and superintending marine engineers. But has it been sufficiently studied in road work? For instance, this lorry drags along the road, the next rushes past and stands for an hour idle in the next village unnecessarily. One must be wrong; probably both are wrong. Study of this subject is most desirable and useful. I am also glad to learn that the scope of the tests has been duplicated so as to take in British motor spirit as

represented by benzole. In addition to studying the economic use of motor fuels, we must also study the development of British-produced spirit.

"The future welfare and development of British motor transport in every phase will depend more and more on economically efficient road performance as distinct from the mere capacity of attaining a certain maximum speed. In petrol consumption, oil consumption, tyre wear, general wear and tear, and maintenance costs, maximum speed is the inevitable enemy of economic operation. These tests which the Royal Automobile Club is to undertake in the

spring will concentrate attention on the subject, and thereby inaugurate a period of transition of principles. There is no means of ascertaining the average ton-miles attained per gallon of petrol by motor vehicles in Britain. It is unquestionable, however, that the average is materially less than it should be. The results obtained in the preliminary tests carried out at Brooklands provide a striking indication in this direction. With six cars representative of different types, by sacrificing an average of 2 m.p.h. in maximum speed, and one and four-fifths seconds in the time taken to climb the test hill, an improvement in miles per gallon of 22 per cent. was obtained. At the present cost of petrol



Continual tests are being carried out by "The Motor-Owner" at Brooklands and elsewhere to obtain definite data in regard to fuel consumption and the possibilities of effecting economy. Fuel consumption tests in themselves are no novelty, but, apart from the broad basis of securing economical running, we have a secondary object in view which we are not yet in a position to disclose. So soon as we have completed our experiments the results will be published; and, while we dislike making a mystery of the matter, we anticipate that our facts and figures will cause general surprise.

this is equivalent to a saving of about 9½d., and if anything approaching such a saving could be generally adopted without sacrificing road efficiency, the economy effected would be of real national value.

"With the return of more normal conditions, motor transport development will proceed apace not only in this country but throughout the world. At the time the use of petrol is expanding, the available supply must be slowly diminishing. Therefore it is a matter of national and even international importance to utilise those supplies in the most economical manner practicable."

IN the realm of sport one frequently finds that the "slow starter is a fast finisher." Admittedly, it is by no means a rule without exception, but, none the less, it remains a fact. In the reconstruction period attendant on the cessation of hostilities, the famous Wolseley works were longer than some other folk in getting down to real production. We do not propose to take the reader through all the ins and outs of the circumstances responsible for that state of affairs. Let it suffice to say that the war work upon which these huge factories were engaged was such that it was a long time before officialdom would allow them to start even designing a new car. There is some very interesting inside history relative to these difficulties—but, mum's the word!

A STRIKING CONTRAST.

To return to our proverb, we now see a very striking example of its truth. Despite the worldwide stagnation in commercial activities which has obtained recently, we were astounded to find—literally astounded—that the 'actual net sales' are still in the neighbourhood of some 130 cars per week. Of course, the wonderful factory, or, rather, series of factories, responsible for the production of Wolseley cars can produce double this quantity if pressed to full capacity. When, however, one considers the comparative inactivity of motor manufacturers throughout the world, the Wolseley achievement stands out the more markedly. It really is astounding.

THE REASON WHY.

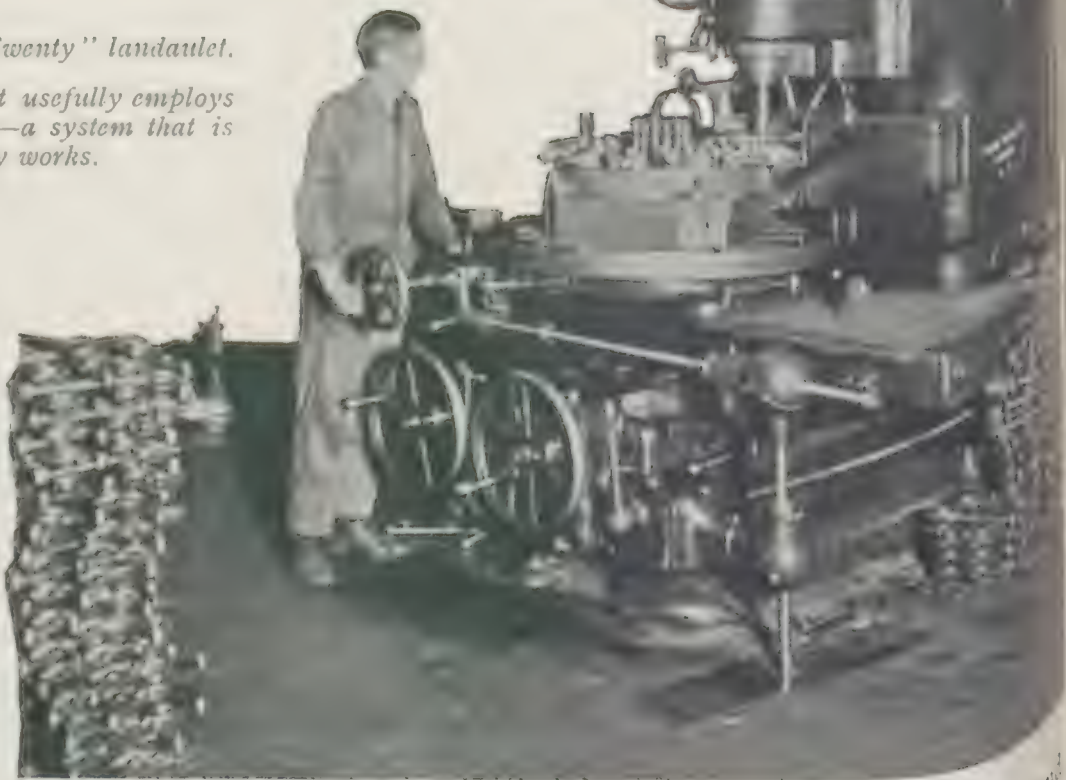
Of course, there must be a reason why—and we do not pose as being unusually accomplished in having discovered it with a minimum amount of difficulty. As a matter of fact, one has only to go for a short run in any of the three standard models; have the benefit of an inspection of the works—and you've got your reason why. It requires no genius to find it. It simply hits you in every line of investigation you choose to make. You can't escape it. We were told with solemn assurance that the actual sale of cars was well over 100 per week, and we went down to find out why. The achievement was so wonderful (under the then existing circumstances) that we felt a heavy demand would be made on our specialist training to find the secret of such success. There is no secret. It is a plain story of success—built on success.

WONDERS AT THE WOLSELEY WORKS.



Above: A Wolseley "Twenty" landaulet.

Below: A machine that usefully employs 100 per cent. of its time—a system that is widely used in the Wolseley works.



Interesting
adopted in the
duction of a Re
sentative British

WONDERFUL WORKS.

The superlative is never desirable owing to the dictates of the old adage that comparisons are odious.

therefore, as the wonders of the Wolseley works cry aloud for the use of superlatives, we must refrain. Every detail of the organisation is astounding in its detail perfection. This we conceive to be due primarily to the excellent scheme of co-operated committee work which is the basic feature of control. Thus the best brains in several departments come together to decide any point which arises. So, for example (we speak literally), that the head of the engine testing department wants to have a 1,000th part of an inch more taken off the piston. Before that 1,000th part of an inch can be taken off, the committee meets and discusses the question from every angle. The head of every department with any interest, direct or indirect, in the go behaviour of the piston has his opportunity for discussing the proposed change. The theory of one has to be balanced with the practical experience of another. The assumed advantage of the change is submitted to microscopic investigation as to the possibility of corresponding disadvantage. And so it is throughout the whole scheme of manufacture. It is a case of *multi-tutioris in* every phase of design, manufacture, production, or development.



A Wolseley "Fifteen" in touring guise.



An example of the popular Wolseley "Ten."

TOOLS WITH 100 PER CENT. EFFICIENCY.

To the average motor-owner the technicalities of car production may not be of absorbing interest. There is one feature in the machine shops, however, which really merits detailed notice. It is the remarkable development of special machinery arranged to be productively used over the full 100 per cent. of the working hours of the day. We give an illustration of one of these machines milling a set of connecting rods.

In the ordinary way one has to stop a machine, "set up" the part to be treated, and then get on with the job. In the Wolseley works, however, special machines are provided which work usefully 100 per cent. of the time. The connecting rods are set up on a rotatable carrier, and whilst some are being actually machined the attendant is setting up others on the carrier ready for attention. Consequently, the cutters are at work the whole time, and of course one attendant can look after several machines. Wherever practicable these machines do more than one operation at a time, thus effecting a further economy. In the case under consideration, for example, both faces of the connecting rod are milled simultaneously.

It is not practicable in a short article to enlarge on this wonderful system, or to detail the extent to which it has been incorporated in the Wolseley factories. This example must suffice in an indicative capacity, and the reader may accept the statement that similar methods obtain wherever their operation is practicable. The amount of money represented by the provision of such special machinery is, of course, enormous, and the scheme can only be economically sound where a large output is concerned.

SECTIONISATION.

What a vile word that is! We do not even know whether it finds official sanction in the dictionary, or whether we

are guilty of coining. Anyhow, it is the best we can think of adequately to express another feature of Wolseley organisation. Every portion of the car is produced in a special section whose responsibility is concerned solely with the successful production and operation of that part. This, of course, is a principle accepted in the works where most high-grade cars are produced, but it is carried to a fine art in the Wolseley factories. You can go into a bay of one

of the big shops, and by closely studying the machinery, general organisation, control, and so on, almost believe the works you are visiting are specialists in producing, say, gearboxes. You move away somewhere else, and come to another section where your investigations gradually incline you to the belief that you are studying the activities of engine manufacturing specialists. And so the scheme goes on throughout the whole organisation. Every



Bays similar to this are many. More than 100 acres of floor space are covered by machine shops, and even now some 8,000 men are employed.

section is a self-contained and superficially a self-supporting and self-interested activity.

For months past THE MOTOR-OWNER has been running its campaign for the greater study of economy in car operation. We have not ventured to demand too much in the way of luxury, but apparently we have been overtimid. We have seen ample demonstration of the economy in operation of the new Wolseley models, and our so-far brief road experiences have clearly indicated a measure of luxury of exceptionally generous proportions. One's pre-war ideas of Wolseley general excellence shoot rapidly to a vastly higher plane with practical experience of the new models. Here we have life, vim, suavity of operation, comfort in travel, and economy in operation combined in a marked degree. It is this economy in operation in conjunction with luxury which has earned so quickly for the new model Wolseley the reputation which has ensured such a wonderful demand in the recent adverse trade conditions.



(A)

(A)

One of the first prizes—a solid silver two-handled cup, the cover of which bears a finely-modelled figure of "Victory."



(1)

(B)

The winged figure of "Victory" again appears upon the cover of this first prize cup, which, like the others, is of solid silver, and of original and pleasing design.



(2)

NATIONAL FU

The decision of THE MOTOR-CAR PETITION in the Royal Automobile Club competition in the Royal Automobile Club has been announced, and we are now in a position to have been specially designed by the Royal Silversmiths to His Majesty the King. The cars of different ratings, and those competitors who desire to win six second, and six third prizes as first and second prizes are to be found on pages 12 and 13. A special display of THE MOTOR-CAR competition from the Motor-Car Club is available for the public.



(3)

(D)

Technically this first prize cup is of a bold Irish design, but if one

THE SECOND PRIZES.

1. A two-handled cup on Early English lines.
2. A sterling silver two-handled cup with solid wire mounts.
3. A two-handled cup with a cover of artistic design.



(B)



(E)

Another covered cup which will be awarded as a first prize. This is of an elegant simplicity of design, an effect that is enhanced by the graceful lines of the handles.



(E)



(5)

(F)

It must be admitted that there is no lack of variety in the character of the various cups. This one, a first prize, although the general description, "sterling silver, two-handled, with cover," applies, is totally dissimilar from the others both in lines and in the handsomely chased repoussé work with which it is covered.



(F)

THE SECOND PRIZES.

4. A two-handled covered cup of Early English pattern.

5. Another cup of Irish design, also two-handled.

6. A graceful covered cup on a baluster stem.



(6)

(D)

to be singular in its description, Cubist tendencies might be alleged.

MY TEST AWARDS.

A series of valuable cups for competition. The Economy Test has already been made. Photographs of the actual awards, which will be divided into three classes for Messrs. Mappin and Webb, Ltd., will be subdivided again to accommodate the use of petrol. Thus, six first, six second and six third prizes will be awarded. Illustrations of the third prizes will be published. Mappin and Webb have kindly arranged for a display of their Oxford Street establishment which they will be glad to show to the Automobile Club.

THE FUEL QUESTION: A STRAIGHT

As Capt. Gordon Aston had offered some sharp criticism upon "The Motor-Owner" Scheme of Petrol Economy by means of the more careful adjustment of carburetters, and, as we are more concerned with the End rather than

THERE is nothing of greater importance, both to the maker of motor-cars and to all classes of their users, than the continuation of the supply, at reasonable prices, of suitable fuel. Some of us may not, as yet, have realised quite the position which has been reached from the economic point of view, but all of us must be satisfied that we are infinitely worse off than we ought to be, that present supplies are inadequate and costly, that demand is steadily on the increase, and that the future, even the immediate future, is distinctly problematical. Anyone who takes the trouble to read White-papers such as that issued by the Fuel Sub-Committee of the Committee for Investigating Prices will find therein a very concise statement of the difficulties with which we are faced, together with an indication of the line of action which must be taken if we are to overcome them. But, at the same time, "findings and recommendations," whilst "all very well," do not get us "much forrarder"—they most certainly do not get us more petrol—and it is a painful fact that the resolutions and suggestions of qualified experts often have to wait a very long time before they are translated into action.

NO NEW FUEL SOURCES.

Such being the case, it is clear enough that any immediate redress, in the form of new sources of supply of fuel being opened up for our use, is practically out of the question. Whatever may happen in the future, we have by some means or another to parcel out our liquid fuel income so that it will continue to go round, and this in spite of the fact that, with the rapid development of the motoring movement, there are a great many more "tanks" to feed than ever before. Clearly enough, therefore, we must all of us be content with a smaller supply per individual car; on that I do not think there can be any disagreement whatever; and it is a realisation of that fact which has induced THE MOTOR-OWNER to embark upon its public-spirited effort of demonstrating how the thing can be done or, rather, one way in which the object can be accomplished.

Incidentally, I may say—it has not been pointed out so frequently as ought to have been the case—that the Government, far from encouraging the economising of petrol, is positively, with its damnable form of car taxation, putting a premium upon its consumption. Nothing more iniquitous could possibly be imagined than the suggestion

from a responsible Ministry that if you only burn enough of the precious spirit you will "get back" so much of your car taxes that you will be "no worse off than before." It is precisely tantamount to recommending that we should all burn our houses down so as to realise the money for which they are insured. However, the new taxation scheme, a monument of wicked departmental stupidity, has come into force, and it has to be realised that it only constitutes another difficulty which has got to be overcome. When, however, Whitehall tells a man he may be wasteful, and that it will pay him to be so, it is very difficult for private enterprise to persuade him that he *must* be economical.

THE SCHEME WILL DO GOOD.

That is what THE MOTOR-OWNER, with commendable energy and promptitude, has set out to do, and I may say at once that its scheme has my entire sympathy and support, which in any case would be accorded (for what it is worth) to any scheme whatever with the same end in view. That this scheme will do good, great good, is in my opinion incontestable; but none the less I hold that fundamentally it is not the best scheme, inasmuch as it is illogical and founded upon an unsound psychological basis. We are here dealing with considerations so big, and evils so firmly rooted, that temporary palliatives are unlikely to be of avail. It is not much good seeking to give the almost moribund patient another month or two of life. What we have got to do is to set him on his feet and make a hale and hearty man of him again.

Why do I say it is "illogical" to ask motor-users to adjust carburetters so as to use less fuel? For precisely the same reason that I should say it was illogical to expect gramophone users not to ask for records, simply because the manufacturers of those instruments had never bothered about the supply of records. Year after year manufacturers of motor-cars, the world over, have gone on making more cars, bigger cars, and better cars, but, so far as one can see, they have never taken the slightest trouble to ensure that the one thing above all others upon which a car depends was in a sound economic state. It is too late for the mere motor-user to make good the sins of omission which are to be laid to the charge of the motor manufacturer. What with cycles and trains and horse-vehicles and trams, we could at a pinch manage to get on without motor-cars (at all events for a time), but the car maker could never by



The twelve first and second prize Cups offered by "The Motor-Owner" for competition in the Royal Automobile Club's National Fuel Economy Test are illustrated on pages 10 and 11. The Cups shown here are intended as the

TALK BY CAPT. W. GORDON ASTON.

the Means, we have invited him to give his views in these pages, knowing that nothing is so likely to be productive of a useful effect than the free and frank discussion, *pro* and *con*, of all the circumstances of the case.

any possible chance get on without fuel. It was "up to" him to realise that fact in the past, and it is devoutly to be deplored that until now he was idiotic enough to ignore it. He took things for granted with an inexcusable complacency, whereas the complacency of the public was far more pardonable. It is surely no error of judgment to infer that there is reason to believe that sufficient supplies of fuel are available.

Petrol, or any other liquid fuel, is simply energy in a convenient form. So far as transport is concerned, that energy is expended upon three principal things—speed, distance and weight. The first and the second are interdependent in a very close degree; the third is not so to such an extent. Transport is to man-power exactly what the wire is to electricity. It enables him to put his energy into effect at different places, with the minimum time intervals. Therefore, in the interests of progress—which is the name given to the economising of man-power—speed and distance are primarily important factors.

REDUCTION OF WEIGHT.

When we come to the question of weight, we come face to face with two facts. One is that fuel consumption, other things being equal, is proportional to weight, and that weight itself consists of two factors—firstly, that of the vehicle itself; secondly, that of the load. For obvious reasons it is desirable that the ratio Load/Vehicle should be as high as possible, and since it is abundantly evident that what we really want to transport is not vehicles but loads, the one thing that *must* be aimed at is the reduction in weight of the car itself.

It has been amply demonstrated that chassis weight, thanks to modern knowledge, *can* be made relatively very small indeed; yet in spite of that very few really genuine efforts have been made to bring this desirable state of affairs about. Cars of all kinds are still far too heavy, and so long as that is the case the logical basis of any campaign for reduced fuel consumption is to attack weight so as at the same time to keep distance and speed as high as possible. If the Ministry of Transport had been logical it would have taxed weight directly, and allowed speed and distance to contribute to the revenue through a duty on petrol or other fuel. This would have encouraged the motor manu-

facturers to do all they could to increase the Load Vehicle ratio, and our aggregate consumption of petrol, even with increased speed and distance, would thus have tended to remain constant, instead of increasing with enormous rapidity. To ask the motor-user to curtail either speed or distance is consequently illogical, because they are the two things of which he naturally stands in most need.

A POINT FOR MANUFACTURERS.

The next point is the "unsound psychological basis" to which I have above referred. This is almost solely concerned with speed and with its attendant quality, acceleration. These two things are what (whether we admit it or not) most of us greatly prize in our cars. True, we do not often require to use full speed, but we like to know the capacity is there when it is wanted. By the reduction of a carburetter jet we can, I freely admit, get less petrol consumption, under ordinary conditions, together with a comparatively slight reduction in maximum speed, but when we use a jet below the "optimum" we shall almost invariably find that we lose "life," acceleration, hill-climbing ability and controllability.

There is another point still in regard to the manufacturer which I would like to bring forward.

Under modern conditions makers cannot afford to give their cars the full road-testing that they ought to get. When they are delivered to the user the engines are new and stiff, and to enable them to give reasonable power in these circumstances the carburetters are set deliberately on the "rich side." How many makers take care to instruct their customers that after a few hundred miles of running the mixture not only can be, *but should be*, weakened? Very few, I am afraid.

In conclusion, I have to express my very hearty appreciation of the sporting spirit of the Editor of THE MOTOR-OWNER in placing so much space at my disposal for the avowed purpose of attacking the "M. O." scheme. Nor must I fail to emphasise the transparent sincerity of his intentions. Administrators of monthly journals cannot be accused of attempting "newspaper stunts" when they are bold enough to announce their ideas beforehand. I am sorry, but not surprised, to observe that in one quarter the scheme was neither criticised nor supported, but "bagged holus-bolus." This is scarcely cricket.



prizes. They are of solid silver, and of old English design, the six being all alike. It may be of interest to state that the average values of the first, second and third prizes are respectively 75 guineas, 30 guineas and 15 guineas.



It is scarcely the motor-boating season yet, but doesn't a picture like this make you wish for summer and—oh, all sorts of things?

CONVINCED that a Motor Journal devoted to sporting topics interesting to motorists would not be complete without some reference to what has long been known as the Sport o' Kings, THE MOTOR-OWNER has decided to set aside a few of its pages to yacht-

ing, and particularly to that phase of sea sport comprehended under the title of Marine Motoring.

Nor is any apology needed for this apparent digression. Certain it is that a very strong link binds together the land motorist with his amphibious brother.

In the early stages, the first born among motor-boats was sired by a land motor. It received the impulse of vitality from the engine of a discarded road car, which was dumped into its hull, linked up with a shaft, to which a



A fine view of Maple Leaf VI, one of the successful boats at Cowes last year.

rather doubtful propeller was attached, and launched on its experimental voyage. This, of course, is now ancient history.

Enterprising engineering firms, noting the initial success achieved, saw in this primitive effort the possibility of developing a separate motor industry devoted entirely to designing and constructing engines of a special adaptability to marine requirements. Thus it was that the motor-car and the motor-boat gradually drifted apart. It is the wish and endeavour of THE MOTOR-OWNER to bridge over this estrangement and bring back these two members of the same family into cordial relation one with another.

But it does not require the brain of a Senior Wrangler to worry out an apology or suggest a connecting link between motoring on land and motoring on the water. To our mind the sequence is obvious. The motor-boat has achieved on water what the motor-car has accomplished on land. Whole vistas of beauty spots are opened up and brought within easy reach, which within the same limita-

THE CALL

A call echoed in the heart of every island dweller, it vibrates a responsive chord within the bosom of every true Briton. Raleigh heard it and so did Drake, Nelson, and all those great names whose names in history are wedded indissolubly to the sea.

tions of time could never be got at or seen without the handy means of rapid transport.

THE MOTOR-OWNER wishes to excite the interest of its readers who, although possessed of the means to do so, yet have never ventured so far as to become the possessor of a power boat of their own. A little picture here, with apologies, may help.

The earth has shaken itself free from winter's embrace. The noontide sun is climbing higher and higher towards the summer heavens. The equinoctial gales have been shut into their caves in the mountains by that mythical god who presides over their destinies; the bosom of the ocean has settled down to its summer slumber. It is the time when shipyards yawn and mudflats are their—well, any old thing that is resting there.

amphibious motorist, in his inland home, hearing the distant voice of the alluring syrens calling to him, points his radiator coastwise and goes "down to the water" in his ship.

What is it, gentle landlubbers, that thus drags him from the comfort of his home? What the irresistible impulse impelling him to treat lightly the awful chance of meeting the great sea serpent and the other lurking dangers of the deep in order to pay his homage at the court of the treacherous god Neptune? Is it—? No, it is not. Is it—? No, it is not that either. Well, then, if it is not the possession



Built for comfort

THE SEA.

with Britain's greatness on the sea, responded with alacrity to that summons. Forgive us if we like to indulge in the fancy that on their answer to that call rested the trembling destinies not only of Britain, but of the whole civilised world.

On some lonely island of a hidden and illicit still, nor yet a shy attachment to some simple and confiding mermaid—in plain words, if it be not wine nor women, or both together, what can it be?

It is something intangible, indescribable, unexplainable. Poetic minds have named it, "The Call of the Sea." A call echoed in the heart of every island dweller, it vibrates a responsive chord within the bosom of every true Briton. Raleigh heard it and signed on; Drake, Nelson, and all those great men whose names in history are wedded indissolubly with Britain's greatness on the sea, responded with alacrity to that summons. Forgive us if we like to indulge in the fancy that on their answer to that call rested the trembling destinies not only of Britain, but of the whole civilised world.

This, too. But read the little pen-picture in the lines below, and see if the inherent love of the sea is not in your British blood also.



yourself of a ship, be it great or small it matters little, and realise what that possession means to you.

Is your ambitious soul consumed with a thirst for power? Once you tread the deck of your ship, you are a king in your own right, with power of life and death over all on board. See W. W. Jacobs on this point. Have you a weakness for feminine charm? Remember that once aboard the lugger and the girl is yours. Are you a lover of Nature? Then—please refer to the vast array of literature dealing with this; the subject is too big for us; in presence of it we feel humbled and subdued. Are you fond of liberty, absolute, unfettered? You have heard, doubtless, of the freedom of the seas. If not, look up Tirpitz or von Scheer on this all-absorbing topic.



Miss America, the Liberty-engined marvel, at speed.

["Motor Owner" Photo.]

May we, with apologies, suggest that we are the greatest maritime nation? Rumours occasionally reach us confirming such a suggestion. Yet how many are there among us who could be called practical sailors? What is the percentage of the male population, excluding of course the professional seamen, who could box the compass, tie a reef knot, or explain offhand the meaning of the term "lee shore"? Still, there are few places in the kingdom which are not, for the owner of a motor-car, within easy reach of the coast.



—and this for speed.

Awake then, ye tardy landmen, cast off the garb of the landlubber, possess

Do you hog? Then for heaven's sake get a motor-boat and indulge your "pash" to the full. With throttle jammed down and the open exhaust, race the wind and the waves, and the shout of your challenge will be echoed by the shriek of the wild sea-mew. Remember, O fisherman, that there are more fish in the sea than have ever been caught; they are waiting for you.

It may be you cannot stick the sea, as it brings up memories of your past life. Then there are the thousands of miles of rivers and waterways, almost totally unexplored by pleasure craft, far removed from the ceaseless roll of the ocean.

Now all these pleasures can be purchased at quite a moderate figure. It is, in fact, good to reflect in these days when national economy is a watchword, that motor-boating is not essentially an expensive pastime. It can, of course, be made costly enough to suit the most extravagant tastes, and for him whose ambition it is to spend freely, yachting and motor-boating afford ample scope. Cost, in regard to motor-boating, is, in fact, a most elastic term.

BROOKLANDS:

RACING IN 1921

IT has been our experience that during the early part of a Brooklands year it has been impossible to forecast the racing prospects for the forthcoming season. So many circumstances connected with the trade and unknown forthcoming events of the year determine the cars which will be competing at our races.

This year, perhaps, the conditions are more than ever speculative. During 1920 the tremendous pressure of work on all the car manufacturers undoubtedly led to a diminution of what may be classed as purely "trade" entries. At the same time, certain firms appreciating the value of the advertisement gained by consistent performances on the track, sent representative cars to both the open and the club meetings during the year and undoubtedly gained their reward.

The problem before the Racing Committee of the Brooklands Club is one which is governed by several considerations. First and foremost, from the proprietors' point of view, is that to provide a combination of good spectacles with exciting finishes for the general public, on whose attendance the financial success of the year depends. Next it is necessary to so form the racing propositions that good entries can be obtained; and, thirdly, if these two conditions can be gained, to endeavour so far as possible to promote races which will encourage the development of the car from a scientific point of view.

It is clear that the ideal race is one for cars of as near as possible equal speed, of equal size and of varied manufacture. Such an ideal is one which heretofore has been unobtainable, and is, perhaps, only to be dreamed of and probably impossible to attain. Cars of equal size vary enormously in the speeds they attain, and although in certain years two or perhaps three makes of cars are developed whose size and speed are nearly equal, yet it has never been found that there are sufficient to make a reasonable "field" for a race. Whether this year we shall be able to attract an entry of three-litre cars for a scratch race remains to be seen. Anyhow, an attempt will be made with this end in view. There is no doubt that to the general public a long race, except it has an added interest such as is obtained from an international competition, is apt to be uninteresting. Short races and close finishes are what attract.

It is hoped that this year we



Malcolm Campbell at the wheel of one of his "Blue Birds."

By COL. F. LINDSAY LLOYD, C.M.G., C.B.E.

For a good many years the grouping of cars in races has been by speed. If sufficient competitors are provided to further sub-divide these classes by limitations, then, undoubtedly, the races will be interesting, particularly to the competitors and to those who look to Brooklands races for the development of the scientific side of the industry.

Here at once the Racing Committee are faced with a difficulty. Assuming that cars are divided into three groups with engine size limitations, say, 3,000 c.c., between 3,000 and 1,500 c.c., and 1,500 c.c., and if each of these divisions is divided by speed into two classes, six groups are obtained. Any given car can, of course, find a place in only one of these groups. Except on the Bank Holidays and the summer when racing can begin at 12 o'clock, a limited number of races which can be held at a meeting. Thus a competitor having a car which he wishes to race at Brooklands could race it, at the most, in only two races, if the above grouping is adopted.

Now, racing at Brooklands is by no means a cheap amusement, but there is little more expense involved in racing a car in several races at one meeting than in one only. The time and expense involved in preparing a car, tuning up and cleaning and coming to the track, is the same however many races a car takes part in; consequently we find that when a competitor comes to a Brooklands meeting he usually wants to enter for as many races as possible at the meeting, and frequently will not come at all if he can enter for only one race.

Unless, therefore, there is a largely increased demand amongst competitors to enter for Brooklands races it seems almost impossible to divide cars into groups of both speed and size.

The question, therefore, arises as to which is the better grouping to go for, speed or size, and it seems undoubted that the former is the grouping to adhere to.

Except in class races for cars of equal size and speed it is clear

may be able to win a long international race for cars of standard size, where the winner will be the most reliable rather than in the fastest, but this race must be reserved for one special occasion. At our usual meetings this year we shall endeavour to provide sport by short races.



Capt. Bentley, of "three-litre" fame.



Sam Wright, the "speed merchant."

Brooklands Prospects.

By W. HAROLD JOHNSON.

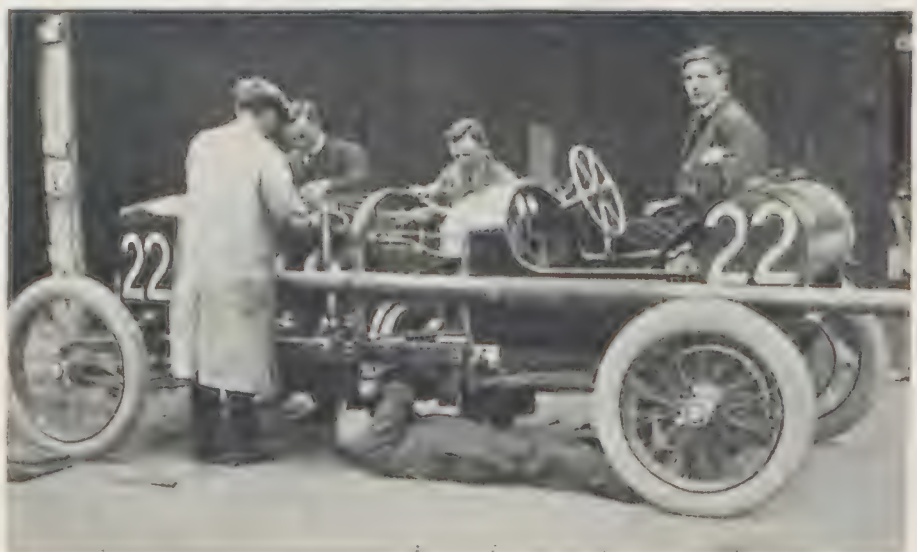
ONLY the very latest newcomers to the ranks of motorists are ignorant of the debt they owe to Brooklands. Only the oldest hands know to the full the real extent of that debt. Brooklands track has perhaps done more towards the perfection of the modern high efficiency engine and car than any other single factor. We have heard a lot about the influence of aero engine knowledge and experience on car design, but it is a significant fact that those makers who soon after the war were talking most loudly of the benefits they were going to reap from their aero-engine experience are now those that talk least about it. And at best the aero lessons were limited in their application to road vehicle construction to engine improvements only.

Brooklands made the modern car engine possible and through it the modern aero engine, thus again reacting on the car; and it is to the track as much as to anything that we owe the modern chassis that can carry the engine with credit.

Last year was the first, after a long interval, of activity at the track. From many aspects it was a successful year. It saw a stupendous development in the smallest type of car, as best exemplified perhaps by the G.N. "projectile" fired and piloted by Captain Frazer Nash; it saw the materialisation of the highest powered car that has ever appeared at a race meeting—Harry Hawker's 450 h.p. Sunbeam, though it should be noted that this horse-power is not an R.A.C. rating. It saw astonishing development of the small ultra efficient engine as exemplified by Mr. Marshall's Mathis, and finally it saw something that was—superficially—retrogressive. I refer to the successes of geniuses like Malcolm Campbell or Major Segrave. Their wins seemed to suggest



Capt. Lees, who favours Vauxhall and Essex cars for racing purposes.



A racing car requires as much preparation as a debutante for her presentation.



"Cupid" Hornsted and his Benz.

that, in order to provide anything like sport, handicapping must be resorted to, and here Brooklands is in the happy position of having gentlemen as handicappers who have made the most exhaustive study of car speeds and have a most extraordinary faculty for gauging the prospective speeds of competitors. Of course, they cannot always be infallible, and there must naturally be cars which disappoint the handicappers in the speeds attained, but one has only to look at the results obtained during 1920 to see how well these gentlemen solve the difficult problem put before them. Such a finish as that seen in the sixth race on September 25th last year is one which would be almost incredible if it had not actually been seen, and whilst these same gentlemen remain as Brooklands handicappers competitors may be assured not only of an absolutely fair handicap but, except in rare instances, one that will give them a reasonable chance of winning the race, always supposing their cars are in good fettle.

In grouping cars by speed alone the custom has been to hold races for the very fast cars on the one side and for cars of low speed on the other, and to have races for cars of intermediate speeds between these two where the very fast cars can meet the slower, and from the arguments given above it would appear that the Racing Committee must adhere to this principle.

Judging from the list of fixtures for which the track has already been booked for the forthcoming season, it would appear that there will be no lack of interest at Brooklands throughout the whole of it. The fixture list is by no means complete, as there are quite a number of other meetings the dates for which have not yet been absolutely settled.

Motor-bicycle racing has now become so popular and has offered such extraordinarily good sport, owing mainly to the energy of that very active club the Brooklands Motor Cycle Racing Club, that this club's meetings have now become some of the most popular held at Brooklands, and the attendance at these meetings is most encouraging. All races held by this club are watched by an ever-increasing number of keen and enthusiastic spectators. That the development of the motor cycle in England is very largely due to the energies of this sporting club cannot be doubted, and its meetings this year are likely to be more interesting than ever, many special prizes having been offered for competitions during 1921.

F. LINDSAY LLOYD.

A result of conferences that have taken place recently between the police, the Epsom U.D.C., the R.A.C. and A.A. and M.U. with the object of facilitating road traffic to and from Epsom Races, is that improvements are now being undertaken on the roads approaching Epsom Downs at a cost of about £18,000, and will provide employment for about 100 ex-service men.

that, after all, the ultra-modern car may not be such a very great advance over its predecessors when the latter have genuine expert tuning and driving. But perhaps opinions on this point will vary. I merely mention it.

There were some things that the year did not see but which were quite anticipated in some quarters. The air-cooled engine did not achieve such wonders as one might have wished, always excepting the G.N. An engine that must come to the fore sooner or later, the four-cylinder-in-line type, stripped of water jackets, was not even seen. No important world's records were established—not at Brooklands, that is.

There is another aspect of the season that is quite important. Beyond all shadow of doubt public support of the race meetings declined as the season wore on, and unless there is a revival next season track racing will have a short life as a popular pastime; 1921, in fact, bids fair to be a crucial year in the history of the track. It will answer the question definitely whether it is to continue as a public institution or merely as a manufacturers' research and experimental depot. Undoubtedly the first is what is wanted, and the first thing that is necessary to secure it is an improvement in the catering arrangements..

Whatever competitors or officials may think, there is no doubt that most visitors to Brooklands—for the first time—expect to see something worth seeing; they expect something spectacular. They don't get it; they imagine that the disappointment is characteristic of most meetings and so they do not come again. For this there are two explanations. The first is the construction of the track, which could only be altered by the spend-



Brownsort and Noble, of A.C.'s, on the never-ending pursuit of the "last ounce."



Capt. Frazer Nash "tinkers" with his G.N. to some purpose.



Dario Rista, whose name is as well known in speed circles in Italy as it is at home.

ing of a fabulous. The second is the handicapping. It is always easy to criticise, where there is something there is generally a single race during the past season when every competitor was satisfied with his own handicap and that of his rival. Allowance made for his nature; and if handicapping on a universally satisfactory basis is impossible why

abolish it altogether and run the cars only in classes equivalent of handicapping, perhaps, but not quite the thing—all the competitors starting together from the mark.

Lord Grimthorpe, who drove a Sunbeam quite a lot last year, has been good enough to give me his views on Brooklands and its prospects, and the main points of his argument are well worth serious consideration. They are divided into (A) reasons for declining support, and (B) suggestions for improvement.

A.—(1) Lack of previous advertisement—to this I would add lack of lay press support; (2) disappointment through postponement of races for trifling causes, such as a shower of rain; (3) total lack of variety in the racing; (4) accommodation for spectators; (5) casual private owners are usually handicapped out of the race.

B.—(1) More variety is essential and might be obtained by long distance races, private owners' races and races less of excuse; (2) let the public into an enclosure on the side of the tracks so that they may see the cars go past close to them—a much more impressive sight than a distant view through a glass pane.

"I say little of the handicapping," concluded Lord Grimthorpe, "which always causes some dissatisfaction because I think it is done very well considering the difficulties and the type of individuals to be dealt with."

(Continued on page 23.)

THE CALCUTTA CUP.—By E. H. D. SEWELL.

The annual competition for the Calcutta Cup will be held at Inverleith on March 17th, but as it appears that many people have never heard of the event, Mr. Sewell explains below that it is a cup presented by the Calcutta Football Club in 1878 for a competition between England and Scotland. He goes on to detail briefly the history of the contest and to discuss the possibilities of the coming match.

It is an extraordinary thing the number of people one meets who have never heard of the Calcutta Cup, what it means and what it is for. It seems that not enough, instead of too much, money is spent on education. What folk do with all their time and money beats me! The Calcutta Cup has really very little to do with the goddess Kali, who is always out for blood, and whose name is the derivative of Calcutta. It is a silver cup presented for annual competition between England and Scotland by the Calcutta Football Club in 1878. There were some lawbees knocking about Calcutta in those days, y' ken—are certain nowadays, too, if you know the ropes—and when a Sassenachs, found they had a large number to spare, they presented this trophy, through their honorary secretary, G. A. J. Rothney, with the result that, excluding the period 1871 to 1877, during which Scotland won two and England three games, two being drawn, the Cup has been held 15 times by Scotland, 13 times by England, in whose possession it is now, while 7 games have been drawn. If we include 1871-77 the figures are: Scotland 17, England 16, drawn 9.

The chief characteristic of the England v. Scotland match—in one of which the eligibles on either side would rather play than in all the other international matches of their time put together—is its close and hard-fought character. Thus there have been four pointless drawn games, two of a try each and two of a goal each. Between 1871 and 1879 only fifteen tries were scored by the two sides combined and four of these were obtained in the second game by England. Between 1882 and 1890, when only six games were played, owing to cessations due to disputes, 11 tries were totalled, but the normal winning score seems to hover round a goal and a try, a try to nil, 2 goals to a goal and a try, and so on; and in this, of all Rugby internationals, it may truly be written that the issue is generally in doubt until the final whistle—which makes for good sport and calls for the most perfectly trained condition in the members of the two teams.

Scotland's XV has one advantage at least over that of England, and that rests in the fact that, on average, her players play fewer games between September 15th and March 15th annually than do the Englishmen. I will warrant that the match-record of Lowe, Hammett,

Davies, Kershaw, Wakefield, Edwards, Voyce for 1920-21 considerably exceed, for example, those of Sloan, Carmichael, Hume, Donald, Usher, Gallie and Maxwell or Buchanan of those who are very likely to be playing in the Calcutta Cup affair of 1921 at Inverleith, Edinburgh. There is always the danger of England being staler than Scotland by the third Saturday in March. Again, there is no comparison between the more bracing air and the better food north of the Border. The atmosphere of Edinburgh's precincts by comparison with that of Portsmouth, Bristol, Plymouth or London is as that of champagne to "fug"!

As I write on Ash Wednesday, that is to say, just recovering from the pleasant Saturday afternoon of February 5th at Swansea, with its nauseating mixture of thoroughly bad sportsmanship, semi-drunken human beings, and what would have been a good match thoroughly spoiled, the outlook is promising for another very close thing at Inverleith on March 19th. England ought to win this, but the game is very far removed from being a walk-over for them. Several of the Scots are better players than is realised on the banks of the Thames, and as the Scottish selectors—a different set from last year's in four cases—have been engaged in construction with this game in view, and as many of the Scots players will be physically fresher than some of the English, the game may very well go the other way. A long-score margin is more likely to come from England than from Scotland, for the scoring-power is greater in the visiting than in the home fifteen.

Whichever way one tries to visualise the game it is quite certain that if the turf is in normal March fettle a very fast match will be seen. There is pace everywhere in both teams, except at half on the Scots side of the scrum, where Hume will be outpaced, if not outplayed, by the exceptionally fast Kershaw, assuming always—as we have no right to assume!—that he is in form. In which connection weighers-up of form seldom realise that, just as in cricket a "W.G." or a Fry may make a duck, or a Hirst or a Lockwood get 1 wicket for 100, so in Rugby a scrum half may "make a duck," though in another way. The old Yorkshire advice:—"Back nowt on two legs" is the safest, though it credits a horse with possessing more consistency and less guile than a man. Which is doubtful.

OPINIONS ON "THE MOTOR-OWNER" FUEL ECONOMY CAMPAIGN.

From INDUSTRIAL RUBBER PRODUCTS, LTD.

We quite agree that this matter deserves the most careful consideration of all motor owners throughout the country. There is no doubt that at the present moment the percentage of cars using an excessive quantity of petrol per mile is very high. Very simple adjustments made in the carburetter will often secure really astonishing reductions in fuel consumption. The necessary adjustments advisable to obtain this result are known to the majority of technical motorists, but there is one possible alteration which will considerably affect the petrol consumption which is not at present generally known—namely, alteration to tyre equipment. Repeated experiments have proved conclusively that while the average life of a cord cover is almost double that of the fabric cover of the same size, mileages of 20,000 miles being not uncommon.

From SWIFT OF COVENTRY, LTD.

I think your idea a very excellent one in offering prizes to drivers of cars who obtain exceptional results in petrol consumption. It often occurs, where a manufacturer cannot achieve a certain result, the private and enthusiastic owner of a car can teach a lesson.

Judging from the wonderful results achieved by owners of "Swift" cars as regards their petrol consumption—some say they do 55 miles to the gallon on a 10 h.p. car, 63 by 90mm., and over 30 miles to the gallon on the 12 h.p., 69 by 130—I think this leaves little room for improvement.

From C. BINKS (1920), LTD.

I have been spending a lot of time lately in an endeavour to reduce petrol costs and have succeeded in a marked way. The amount of petrol that is wasted in flooding and doping an engine on a cold morning is shocking as it is hopelessly inefficient.

THE COST OF MOTORING. By SIR HERBERT AUSTIN.

Some of the Principles a well-known

IN these days of high income tax and high costs generally the price of everything is very keenly noted. It is not surprising, therefore, that a great many people are saying that motoring is expensive. The principal points usually dwelt upon in this connection are the new tax per horse-power and the cost of petrol.

These items are, however, quite trifling when spread over the year and contrasted, as they would ordinarily be contrasted, with the cost of either hiring a car or travelling by train as a first-class passenger.

The really serious expenditure on motoring has always consisted, firstly, in the initial cost of the car; and, secondly, in the cost of motoring repairs.

It is for this reason that when we set out to provide the motoring world with what we conceived to be the most suitable post-war model we laid down the following principles:—

That the Austin car must be sold at a moderate price; and

That it must be so constructed as to reduce to a minimum the risks and chances of damage through ordinary stress and strain.

People who have not visited Longbridge have little idea of the extent to which testing and the inspection of parts is carried. Every bit of steel which enters into the car as a component is subjected to a searching tensile torque and fatigue test, and I attribute the excellent running records which our cars have made in the past very largely to the care and thoroughness of our officials in carrying out this work.

The bearing of this upon the cost of motoring is realised by the owner immediately he comes to sell his car. Naturally, there are owners and owners. As long as inequalities of fortune remain, some people will be able to afford a new car every year, and others will find it more convenient to purchase a car which, although quite capable of giving excellent service, has had the first bloom of its freshness rubbed off.

A well-built, moderately-priced car suits both these sections of the motoring community. The initial capital outlay being relatively low, the lover of a new car can please his taste and his fancy without feeling that the cost is extravagant or that the charge he must debit to interest on money is excessive. When he sells out and buys a new car the drop is again moderate.

Turning again to the question of the actual running charges of motoring in so far as they relate to the Austin



A recent portrait of the Author.

involved in the design British Car.

car, reports which reach us with regard to the actual petrol consumption of the "Austin Twenty" from private owners are very varied. The average appears to be 19 miles per gallon but some owners claim to have obtained 20 miles per gallon.

Every experienced driver of a car knows much depends upon the way in which the engine is run. An inexperienced or careless driver would waste almost as much petrol as he used.

Our standard carburettor setting, namely, 21 on 95 main, and 105 compensating jet, is intended to give the maximum of speed, and has proved a very satisfactory all-round setting, but many clients come to us who wish to have an all-round setting, but purely an economical one. They are willing to sacrifice a little of the top speed in order to get additional mileage from each gallon of petrol. The carburettor can be tuned up accordingly for this purpose we generally adopt the setting—20 on 95 main, and 95 compensating jet. This setting was originally put in for an Austin owner after he had been running his car for about 3,000 miles, and his report was that he is at present getting a consistent 20 miles per gallon in the city area and 23 m.p.g. when on a long run.

"C. J." ON ECONOMY.

To the Editor, THE MOTOR-OWNER.

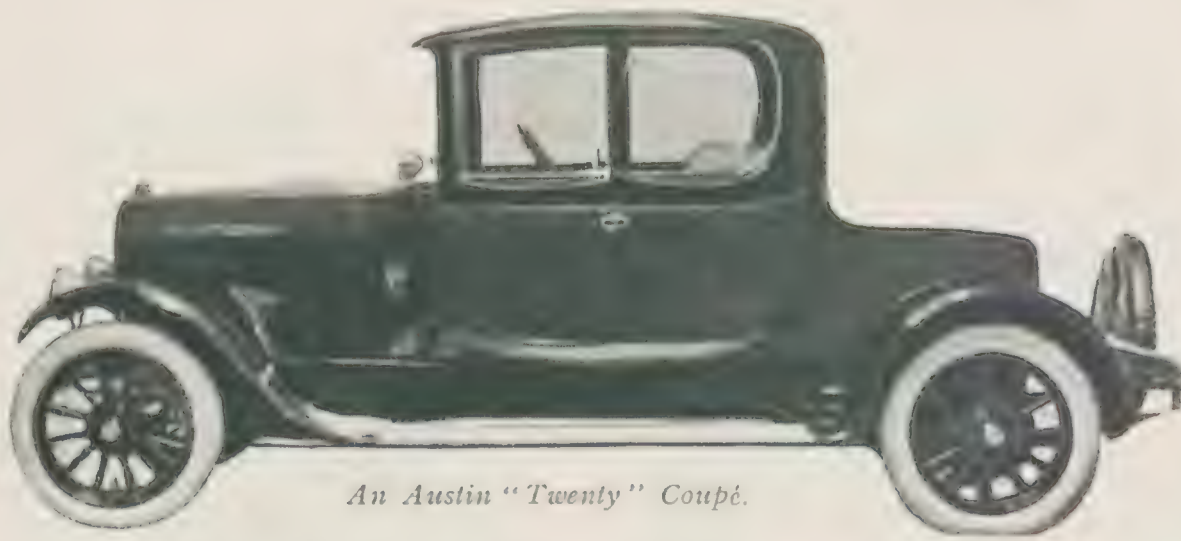
I think your suggestion with regard to the economy test a very excellent one.

From my personal knowledge and experience of the way in which cars are passed at the factory, before delivery to the user, I can safely say that practically no importance is attached to the question of economical running. Nothing is sacrificed to speed—on the level and uphill. In some cases attention is paid to slow running, but at these points the average works' tester cares nothing as nothing is asked for by the employer. The manufacturer's point of view is that the car should be able to carry out its duty without undue wear and tear.

The necessity for economy in petrol consumption during the war was so great that I was appointed an official and a special committee to carry out experiments, and as a result, I was able to obtain very extraordinary results. I think that a car

petition such as you suggest, which will assist the owner in testing and adjusting the carburettor of his own car to secure economy, will be of very great value in these days when petrol is almost the value of weight in gold.

CHARLES JARROLD.



An Austin "Twenty" Coupé.



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VALUE FOR MONEY. □

EFFICIENCY is the keyword of industry to-day, and particularly of the motor trade, which, not so many years ago, was a happy-go-lucky sort of pursuit that proved a costly amusement. But this efficiency has not been obtained without much experience dearly bought, upon occasion, yet inevitable as the price of progress. How well motor vehicle manufacturers have learnt this lesson is known only to those persons who are acquainted with modern methods, though the reader of this page may gain an inkling of the truth from its illustrations.

While all the firms that count are striving after efficiency, and with it saving of time and labour, on the one hand, and of the purchaser's pocket, on the other, not all of them work on the same lines. One group of manufacturers prefers to go in for mass production, and that on a very large scale, with the result that its cars or lorries resemble one another as do the members of a flock of sheep. Another group builds a limited number of vehicles, expending more time proportionately

That care is the keynote of the British motor industry is pointed out in this article, which describes something of present-day methods.

On several occasions recently we have described in THE MOTOR-OWNER the methods adopted by various prominent motor manufacturers, and it is not necessary, therefore, to dwell at length upon the whole of the customary procedure. But it is as well to remark that there is no room for haphazard methods—the life of the firm adopting them will be a brief one.

Suitable metals having been selected after previous tests in the rough, are then operated upon by jigs and other machines, many of which are very costly, and all working to marvellous accuracy. But clever as this mechanism is there is always room for error, or a need for testing its work, to carry out which an expert staff scrutinises its results with delicate appliances measuring to an infinitesimal decimal of an inch, or subjecting them to stresses hundreds of times in excess of what they are likely to have to endure.

In one of the illustrations on this page a road spring is being examined for flaws or unsuitability, while another picture reveals the expeditious process of welding rims to disc wheels, both of which are but small items in the lengthy list of operations that go to the making of a car.

While one firm, finding that it is cheaper to do so, prefers to purchase certain small items from specialists in that particular line, another is not content unless it makes practically the whole of each car on its own premises. Both methods are correct, the choice depending upon the size of output and other factors of no particular interest to the reader.

Of more importance, to car-owners in particular, is the fact that all manufacturers of reputation are careful to give of their best. If one firm prefers to let A make certain small parts, who can object? Presumably A knows his job, and, being a specialist, ought to retail these items at a lower price than certain car manufacturers could make them at.



Above: Testing springs for Napier motor-cars.

Left: Napier chassis in the last stages of mechanical perfection.

Below: One of the most recent of automobile processes. Spot welding rims to the discs of road wheels for Cubitt cars.



on each, so that something like distinctiveness may be traced in the breed.

All the same, method, thought, system, lie behind each group, adapted to the individual end. In one case a firm manufactures the various component parts of the vehicle in separate departments, transferring them to another locale for the final assembly. In another case, as the car or lorry grows, it is propelled along a railway track by stages, each stage seeing the addition of another component.

But behind all this divergence lies an enormous and unsuspected amount of work. Thought has to be given to the quality of metals, with a view to their particular use; to the problem of how best to cut down weight, while still ensuring the necessary strength; to a score or more of other things—low cost, easy manufacture, and to provide accessibility for the purposes of lubrication or inspection.

MY INTERVIEWS.

I.

THE mustard coloured one looked me up and down, then down and up. I, consequently, stared him through and through. But I was almost surprised when he held up a beckoning finger-nail

With undue celerity the 120 mammoth power lift—passed at Lloyd's as A.A.—shot me up to the seventeenth *étage* and a forbidding portal. Brain energised (they've got past mere machinery at Fanum House), the latter creaked open, and my hesitating glance fell upon a Royal Personage.

"Come in," invited Miss Queen. "Quick! The sooner you're in, the sooner you're out! Want to see the Chief?"

I *did* want; or perhaps I should say, I *had* wanted. The tense was getting distinctly past; I began to didn't. The *mise en scène* was oppressively opulent.

I saw the Chief.

The Chief saw me.

Visibility, in fact, was distinctly good

"My dear old chap; so awfully glad to see you"; he put me at my ease

"Want my views on motor legislation of 1930? Easy!" he howitzered. "Listen—this, and this, and that. Good-bye! Oh, have a quick one? Cheerio!"

I haven't been a Major (temporary and R.A.S.C., to boot) for nix. With almost Colonel-like imperturbability, I stood my Brussels carpet.

Stenson elevated the right eye-brow—he can do those things well. "Want more?"

I presumed he meant views, not *Vie, eau de, tots*, another.

"Yesaboutthehighpoweredcars," I tornadoed all in one breath. Staring me in the face was the Sunday school rhyme: "We've our living to make—so've you—but NOT here!"



"... held up a beckoning finger nail."

"There's nothing like fencing——," he began.

I fired a volley.

"What, precisely, do you estimate the tax at?"

"Well, if you will have a mask and two foils and four or five ripostes——"

"But how do you suppose it will affect your own car?"

"The supply train runs daily. It carries rations, fencing, corps, one, to time——"

"1930?" I hazarded.

The Chief's eyes glistened. "Quite right," he staccatoed. "I'll never forget, to the day of my birth, Carpentier's amazement when I cried 'Guard!' He found himself, for once, down and—I might add——" "Ess Cee" continued with characteristic modesty—"and out."

Whereupon I myself was quickly both.

By A. J. McKINNEY.

Illustrating the Difficulties of the Press in Keeping People Off their Pet Subjects

II.

I got out of the train at Ditchling. "Do you know S. F. Edge?" I enquired meekly of the Plutocrat engulfed my ticket.

"Oo don't?" countered Dr. Johnson. . . .
"Yes, sir," said my host. (N.B.—It's the first time has "sirred" anybody, but he recognised in me a modesty forbids particularisation.)

"Yes, sir," he repeated anxious for his pearls appreciated by the—that is, the quadrupeds that then grunting around my earthstained brogues.

But, to get on . . .

"Yes, sir," he re-repeated. "I think in sixes know that?"

"A six-cylinder car that shall be nameless," I quipped brilliantly—I had once had a (trade) luncheon at expense.

"Don't drop your terminals," he rebuked, as if I hastily jumped away from the business end of an H.T. Let me amend it. Thus—CarT Got it?"



"... six-legged pigs—all my own breeding!"

I put on the wise MOTOR-OWNER look that is so helpful when folk ask the one thing I don't know, and nodded.

"Not knowing any better, you and all the other inhabitants of the universe, bar one, would call them tractors don't."

"That term's out-of-date—the limit. The new prophecy—the Edge!" he continued.

"Yes," he ran on, "six is the magic number. pushing it for all I'm worth. Six motoring organisations, six makes of cars—the Ford doesn't count—six wheeled carTs and six-legged pigs. All my own breeding! Oh, never mind about motor legislation in 1930!" I interjected to my halting question, "that sort of thing sets my nerves on E—; on—on myself. I must have another 24-hour race at Brooklands—for pigs, six-legged pigs, this time. Now isn't that a stunt?"

"But what'll happen to cars then?" I exclaimed in tones less nicely modulated than usual.

His dark eye flashed reprovingly. "Cars! What are they?——"

III.

The *prima donna* received me with open arms. It was very nice of her; I determined to make it a long interview.

"Motor legislation in 1930?" she



"I determined to make it a long"

trilled prettily through her pearly teeth, as she shook an admonitory finger. "Really, you naughty boy; in my short life I haven't had time to think of such things!"

"Well—er—" I explained informatively. Her quick wits grasped the situation.

"I see!" she smiled. "Well, like Puccini and Maestros, my favourite movement is the 'Con molto espressione,' played scherzando, with here and there a mere *souffçon* of the far niente . . ."

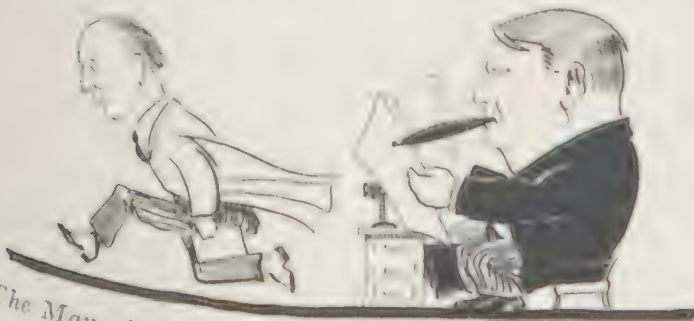
She seemed to be getting a little off the track, so, like the man I am, I tried to steer her dear feminine elusiveness into MOTOR-OWNER channels.

"Oh! and will you really put my picture in your paper? How too delightful!" And all you tell me too, about your views on motor legislation in 1930," I emphasised joyously.

"Love!" she sighed impressively; whereat I wondered if I was in luck, or if she was merely a ping-pong player.

IV.

The next on my list was a Man of Brain. He must be because he owns several journals, all well in advance of the clock.



The Man of Brain indicated that I was wasting his time.

"Motor legislation in 1930?" snapped the voice behind the cigar. "You're wasting my time. Read last Saturday's 'In Advance.' G'mrn'g."

BROOKLANDS PROSPECTS.—(Continued from page 18.)

The first thing that has to be borne in mind when considering suggested improvements of Brooklands is: Will they cost much money, and, if so, where is it coming from? An American visitor to the track last year said that if he had the running of it he would make his fortune out of it in a very short time, and as he has already done so with tracks in the States, it may be taken that he has some knowledge of his subject. But it is painfully obvious that at present the track gives poor promise of a useful return on a big capital outlay.

But whatever the public support the track is likely to receive, it promises to have more than ever the support of the manufacturer. As I have already pointed out, the two things are so very different that an excess of the one in any way compensates for a lack of the other; what is wanted is increased public support, which turns, as I see things, on the matters I have already touched upon. As regards manufacturers, while some are very secretive as to what they may or may not do—or try to do—one at least makes no secret of his plans, and the concern behind Mr. Louis Horstmann is out for big things with a crew of world-renowned

Also, some manufacturers who have never before gone to all extensively for track work may bring a few surprises to the old hands. The new Silver Hawk, which hails from next door to the track, is openly announced and regarded as a racing car, but the Lagonda of Staines and Horstmann from Bath may have something to say.

V.

Sir W. J. H. was my next victim. I announced myself with trepidation. Not that I feared him; he is Geniality itself; but everybody taxes his good nature, and he works hard, out of Parliament—and in it!

Lucidly, happily, cheerily, he unbent.

"Motor legislation in 1930? Isn't that rather too far ahead? I've got more than I can straighten out in that of the 1920 incompetents. One thing at a time is my—well, no, hardly that—" he amended, with his habitual truthfulness. "Look here. Try the A.A. I hear they've got a rather useful man there. If they can't help you, well, I seem to have heard that there is another organisation round about Pall Mall . . ."

VI.

Sir J. Unawed welcomed me expansively as I put my stock question. With his admitted administrative ability he answered it judicially—and non-committally!

"Seen our new bath? We've just instituted an aeroplane douche-tap, like a new-made cloud, you know. Like to go up?"

"In 1930," I persisted.

"We'll have to wait till to-morrow for that—it's only 1921 now, and our superimposed billiard tables are 17. Seventeen stories of them!—players on stilts! How's that for progressiveness? And yet there are sadly uninformed people who—"

"Wanted on phones No. 17,201, 23,009, 37,771, 91,914, and 273,645, sir," interrupted a superb Field Marshal.

"Oh, Motor legislation in 1930? Just wait until I've talked to China, the Lofodens, and the summit of Mount Everest, and I'll show you what I've decided . . ."

VII.

As a last resort I turned to that infallible mentor, "Old Moore." Ever up-to-date, it did not disappoint me, and, proud of my success-crowned labour, I set it boldly forth in the best type our printer can borrow.

NOT KNOWN.

I am sorry to have to conclude on a sad note, as regards drivers. There is no doubt that, instead of increasing, the genuine sportsman-driver is rapidly dying out. It was to be hoped that Brooklands might have become a rich man's recreation, like horse-racing or yachting, but it is never likely to do so because the trade element is so strong. And the type of man who could afford to race at Brooklands at all seriously, for the sheer love of sport, is not attracted by the type of competitor he meets and by the knowledge that he has to surpass not merely the trade driver's skill but the organisation and resources of the factory he represents. Races for private owners only would provide some sort of answer but not an absolute one, for there is the "shamateur" question, which, however, need not prove insuperable.

AN INTERESTING COMPETITION.

In order to obtain an 8 h.p. Rover all one has to do is to correctly estimate the number of K.L.G. sparking plugs sold by Messrs. S. Smith and Sons during the period February 21st to March 7th. A second prize of a 3-speed, 4 h.p. Triumph motor cycle, and a third of a 2½ h.p. Enfield two-stroke will be awarded for the next nearest estimates. Additional prizes are six Smith bezel-wind mantelpiece clocks and fifty consolation prizes in the shape of accessories valued at £1 is. from Messrs. Smith and Sons' varied stock. Estimates must be made on the coupons contained in K.L.G. plug boxes, and must be sent in before first post on March 8th. It is interesting to note, by the way, that Messrs. Smith are holding a great accessory sale, at which remarkable bargains are obtained.

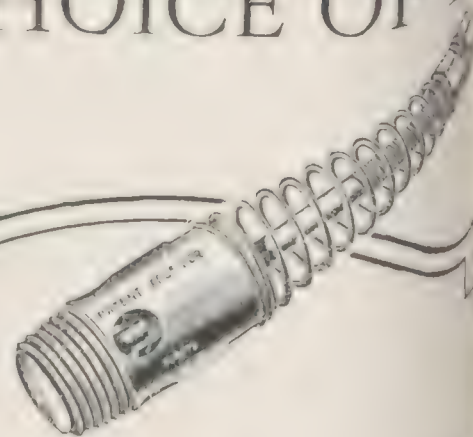
JUDICIOUS CHOICE OF



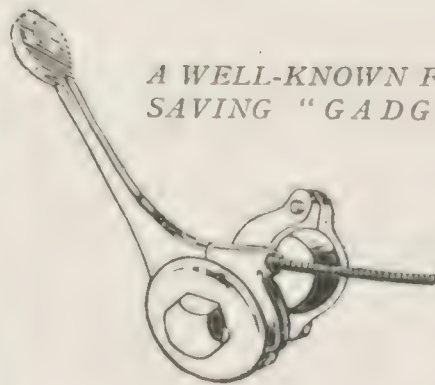
An ingenious standby in case of trouble with the regular lighting installation. Filled with petrol, the little lamp will burn for some hours, giving sufficient light to satisfy at least legal requirements, and thus effecting the economy of saving the price of a fine!

The Bowden extra air-valve. In spite of the improvements in car- ters, the re- ments of the engine are so that there cars on which ting would soon justify

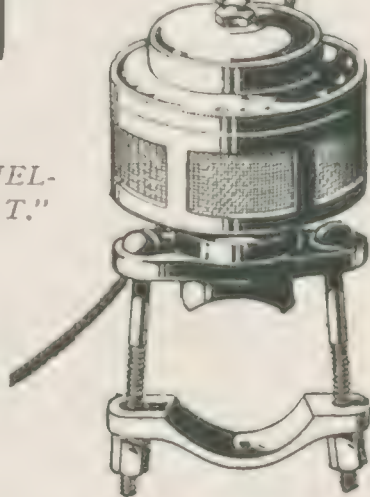
prove- buret- quire- modern varied are few this fit- n o t its cost.



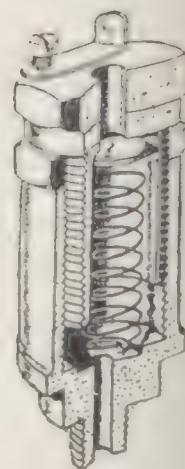
Extra air valves take many forms. This Terry valve, selling at 12s. 6d., is of a simple spring-controlled mushroom pattern, and is designed to be fitted in the inlet pipe above the throttle. Means of adjustment of the spring tension is provided, and after correct setting the valve functions automatically.



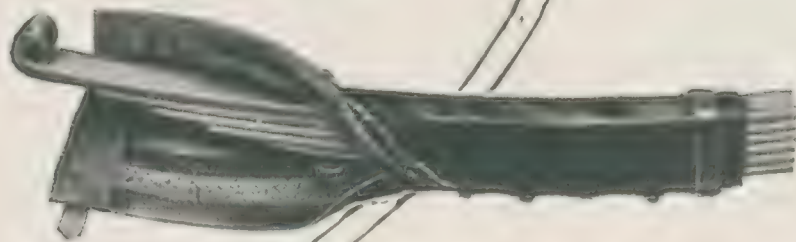
A WELL-KNOWN FUEL- SAVING "GADGET."



Still another extra air valve, the L.W., to a certain extent combines the advantages of the Bowden and Terry valves already dealt with in that while it is normally automatic in action, it can be controlled by hand at will. The valve opens only at high engine speeds, but the lever seen on top of the device operates a shutter which cuts off the extra air



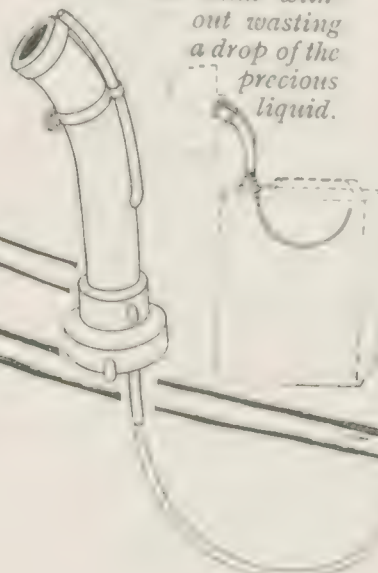
Prevention of wear is a form of economy, especially in regard to springs, which is not given much attention by the average owner. But the effect of a thorough cleaning and greasing, followed by the fitting of covers such as the Duco gaiter illustrated has a remarkable effect on both wear and comfort.



A filler nozzle which is more convenient for packing in the tool kit than the usual funnel, and which will allow of a can being emptied into the tank without wasting a drop of the precious liquid.



The carburetter is the main thing to consider in studying fuel economy, and although most examples can be supplemented by an extra air valve, more scientific attention has been given to the carburation problem recently. The Cox "Atmos" carburetter illustrated is claimed to give far more perfect control at any engine speed.

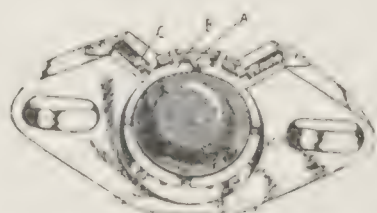


RIES

SPELLS ECONOMY.



Economy simplified! Why buy or carry ten separate spanners when one "Dumb-bell" will do the work? It should be strong and more or less unbreakable, as it contains no loose parts, and it is cheap, the Number 2 model, to take nuts up to parking-plug size, being priced at 4s.



The Leasco "Petreesaver" represents more than an attempt to get the better of the oil trust, for it is termed a "carburettor perfecter." It fits as a gasket in the carburettor and inlet pipe junction, and as the gas flows to the engine it is further atomised by the fine gauze; and as the suction increases the gauze is slightly lifted, thereby opening tiny air ports. An economy of 50 per cent. is claimed in addition to greatly improved all-round running and freedom from the danger of fire through backfires.



A compression tap which positively prevents leakage, and which, in view of the method of operation, should be immune from most of the usual troubles of this necessary automobile fitting. The price is provisionally 2s. 6d., from the Automobile Engineering Co., Ltd., of 6, Old Bond Street.



either partially or entirely, according to its setting. It might be advantageous to couple up this lever to a control on the steering column. The L.W. air valve also screws into the induction pipe and operates in accordance with the suction of the engine. The price is 12s. 6d., and the fitting can be obtained from Bransom, Kent and Co.

Licence holders, although—or perhaps because—they are quite new vary remarkably from simple stamped devices to ornaments that ought to be studded with precious stones. A simple holder such as that from Brown Brothers, illustrated below, is sufficient for most people, especially considering that the whole idea is most unpopular



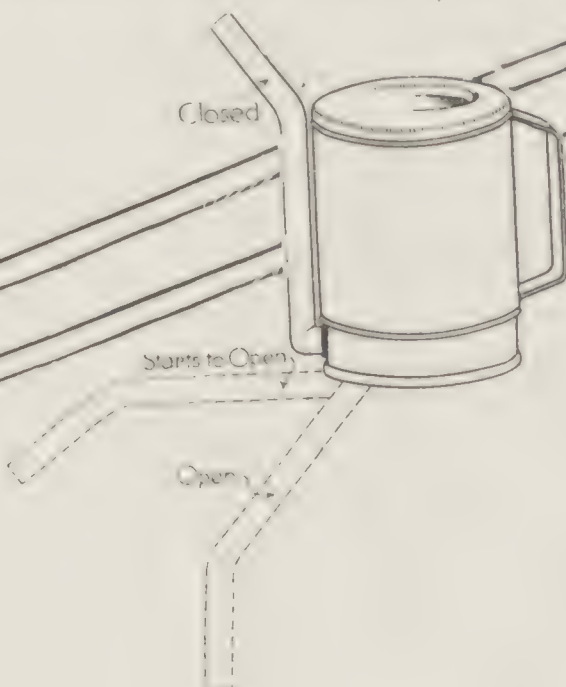
The "Swing-spout" oil measure, sold by S. Guiterman, explains itself, and as the pouring of oil into the base chamber usually presents some difficulty if one is (as one should be) averse from waste, it is an accessory that should prove useful.

throttle setting than is usually obtainable, and a bench test with a lorry engine which we recently witnessed indicated great possibilities in this direction. The Atmos is as different from the early forms of carburettors as chalk from cheese; it is a scientific instrument, and represents a serious attempt to solve a difficult problem.

Closed

Starts to Open

Open



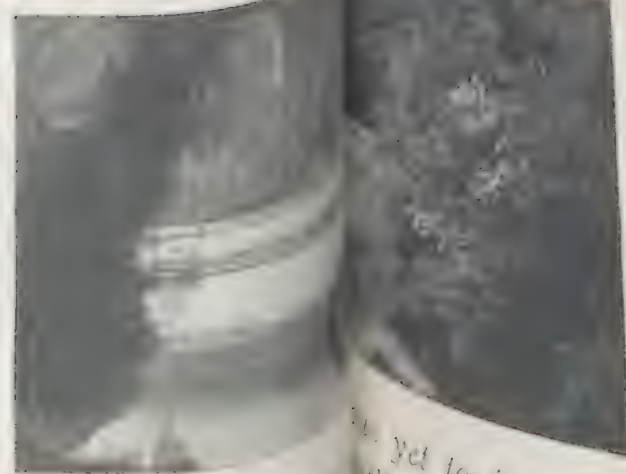
ARUNDEL, THE HOME OF



Arundel from the River, with the Castle as a dominating feature of the picture.



Is it possible to imagine more typically English scenery than this view of Swanbourne Lake, Arundel?



Most of the luxuriant stream and its surroundings make a picture at all seasons.

Arundel, one of the glories of Sussex, is a town on a knoll whose hem is laved by a river and thereabouts the river, lately emerged from a gap in the South Downs, broadens out as it reaches between low-lying meadows, towards its mouth that sea, our heritage, which we proudly call the English Channel. The town then is to be seen from a distance, and so—and because too it is a comely little country town, and also because the knoll is surmounted by two churches and a mighty towered castle—Arundel composes a picture of a sort not uncommon in France and in Tuscany, rare in the England that is south of Trent. The castle, which lords it over the town both physically and socially, is no sham castle. It has portcullis, and a moat, and Edwardian towers betokening a habitable part, abode of the nobles. It is a re-building; for the Rebellion, was for seven years the Parliamentarians' and the king's. That was the third time, in 1102, wrested from the Norman of Roger de Belesme, and a few years later, when Matilda to surrender the castle, and heavily timbered, with deer roam, graced, to the ranges north from the castle, and down to Arun in its gap.



A proud monarch of all his surveys. "Black Rabbit," well known to oarsmen.

THE DUKE OF NORFOLK.

ost of the luxuriant
ar, but the bridge
roundings make a

glories of Sussex, is a town which may profit, but not too much, to set foot in it. For the town is laved by a river, lately emerged from the broadens out as it reaches the downs, towards its mouth, which we proudly call the Arun. The town then is to be seen from the— and because too it is a town, and also because it has two churches and a mill, it composes a picture of peace and in Tuscany. It is south of Trent. The town both physically and socially, is no sham castle. It boasts a draw and portcullis, and a Norman keep and Edwardian towers betoken the castle's age. The castle is a re-building; for the castle, in the Rebellion, was for seventeen days besieged by the Parliamentarians and by them badly damaged. That was the third siege of Arundel. In 1102, wrosted the castle from a tenant of Roger de Belesme, son of Roger de Montgomery, and a few years later King Stephen forced Matilda to surrender the castle. A park, and heavily timbered, in which several deer roam, graced, too, by a delectable forest, ranges north from the castle, and eastward down to Arun in its gap.



The Bridge at Arundel, with the Castle again dominating the scene. This is the view that motorists best know.

The rolling downs of Arundel Park, as peaceful a scene as one could find in this somewhat perturbed island.

monarch of all his
surveys.

THE CHALMERS "SIX."

An Appreciation after a "Motor-Owner" Test Run.

AMONGST established American motor cars the Chalmers is readily distinguishable for merit. Now in its fourteenth year—it was first manufactured in 1907—the Chalmers has settled down to a design that is at once steady and approved, so much so, indeed, that it provides none of the unwelcome surprises too frequently associated with enterprising but insufficiently hatched models.

From the point of view of age, then, the Chalmers may be received with confidence, for it is of no mushroom growth. And in so far as reputation counts this quality likewise would appear to be enviable. At any rate this car has gained numerous hard-fought victories and possesses an exhaustive clientèle in America.

At the moment, however, we are concerned mainly with the car as it appears on our side of the Atlantic, and to gain first-hand news we had it out recently for a tortuous two-hundred mile run that kept within forty miles of North London.

For a trip of this sort the Chalmers is very suitable. It is a sensible car—its value lies in good design, in those features that produce satisfactory service, rather than in that expensive "show finish" for which the user seldom receives an equivalent.

While there are four types of coachwork, the chassis is the same in each case save for a slight variation in wheel-base.

Three of the types are open, seating, two, five, and seven respectively, the other being a town carriage of the sort known as sedan. It is claimed that each model is unusually well sprung, a virtue frequently found in American cars and attributable to the five-seater we tested.

We had plenty of opportunity to prove the car's worth in a variety of circumstances. By little-known lanes we penetrated through Dollis Hill, Kenton, Mill Hill and so on to Brockley Hill, the major portion of which we climbed on top speed. Had we wished we could have achieved the ascent without changing down, but that would have been a needless strain on a car with a fairly low "top," especially as slippery roads necessitated a careful approach. Speed had to be kept down through North Haw and the cross country lanes around Essenden, Ware, Puckeridge and Buntingford, but there was ample scope to satisfy us with the car's brakes and its powers of acceleration.

The six-cylinder engine is not large, being about 25 h.p.—3½ in. bore—but it is efficient, keeping the car at an easy

gait in the neighbourhood of 30 m.p.h. This pace, for though practically twice that figure is within its compass, one notices that the engine manifests indication of being near to its maximum. But apart from this there is nothing to criticise adversely. The car holds the road well, steering is light, weight is reduced judiciously and the self-starter is robust. From rough tests we made at the time the Chalmers is economical with fuel, no doubt a reason of the "hot spot," as the makers term the place of passing the induction pipe through the exhaust. In practice it proves very satisfactory, and at all speeds carburation appears to be very efficient, aided, I think, by the "Ram's Horn" style of manifold, adopted after much experimenting.

Other points that may interest are wide doors, tilted seats with deep cushions, the easily handled gear and curtains that come down with the doors, and the complete equipment of accessories. The headlights are of the anti-dazzle type, the carburettor is a Stromberg, the clutch is a dry disc, and the radiator is detachable.

To our mind, country motoring is more pleasant than on frequented main roads. One tires of continuing high speed and of the peculiar individuality which merely desires to get to a spot that he may be able to saunter along with leave it. A car that continually offers unexpected, with sudden twists and little rises, brings a welcome variety, as well as introducing one to experiences less than the high road offers. The route we took on this occasion has a

sure all its own. Much of the time you are in real country, passing through sleepy but remarkably cheerful villages like Puckeridge and West Mill, where twice a week a fox gives the hounds a hot run. Here, too, lie clusters of thatched cottages, with black, low-hung rafters and framework patterning their chrome-coloured exteriors, and over all rests a sense of unhurriedness, a welcome from the noise and stress of a city.

It is a trip of this sort that gives one the education is so welcome to the jaded palate. What do they of England who only highways know? Not its leafy by-ways lurks infinite charm, even in those most people would fear to explore. Yet the modern car, so to phrase it, very nimble footed, and there are many recognised tracks that forbid its approach—at any rate so tractable as the Chalmers.



A Chalmers "Six."

CHALMERS CHARACTERISTICS

No. of cyls.	..	..	6	R.A.C. rating	..	25
Bore	..	..	83 mm.	Brake h.p.	..	45
Stroke	114 mm.	Ignition	..	Remy H.T. coil
Cubic capacity	3669 c.c.	Starting and lighting	..	Westinghouse



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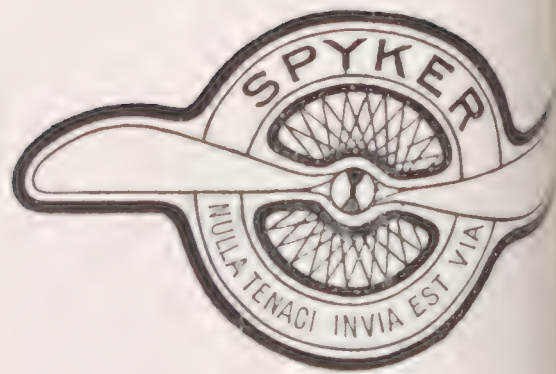
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Total cost of replacements and repairs £2

At the finish the 30-40 h.p. Spyker was going better than ever, and was quite ready for an even more rigorous trial. This will be undertaken in the near future.

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Page



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ge speed, 25 m.p.h.)

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STROL R**
*exclusively
on this run*

THE ROAD THROUGH LAKELAND.

THE traveller who has won to Kendal—it may have been by way of the diversified route from Skipton, through Gargrave, Long Preston, Settle, Clapham, and Kirkby Lonsdale, or possibly by way of Lancaster, Carnforth, Milnthorpe, and Levens—has then, if he be intent on Carlisle, a choice between two routes—one, 44 to 45 miles in length and the other, say, an odd mile over sixty. The shorter route, after the fashion of those sturdy fellows in knickerbockers and hob-nailed boots who are common objects of the Lake District at holiday seasons, goes up and up and up for

from High Borrow Bridge to the summit and down from the summit, the going is rough on tyres. All the same, considered as a trunk road across hills so high that they would be rated as mountains anywhere south of the Trent, east of the lordly Severn, and west of the line of the Bristol-Exeter highway—that is to say by Dartmoor folk and Exmoor, as well as countless others—it has points for the man in a hurry to win to the Border and beyond, into the Land o' Cakes and Mountains and Floods and Banging Saxpences. For, after the ten-mile climb, and after the several miles of usually stony going, the further way of the

road through canny Cumberland, except in Penrith, is normally—by that one means except when the road-menders are out or ought to be out—quite comfortably adapted to travel at speed. And of the roadmenders it may be said that usually they are out to time. The main roads of Cumberland are relatively uncommonly well kept.

But, though one would be guilty of unfairness were one roundly to condemn the Shap road, nevertheless that road is not worth a second thought except as a direct road. The fells over which it toils on the 16-mile stretch from Kendal to Shap Village, though



An A.C. in Lakeland.

ten miles, on its way to Shap Summit, about 1,300 ft. above sea level, whereas the other takes a line of less resistance, for all the world as if to save breath were better than to save shoe-leather.

The motor-owner, of course, is concerned to save on leather than to save on grease, rubber, and petrol. But though tyres are expensive and the price of petrol exorbitant, the fact remains that of Economy—that painstaking dog—there are two breeds, one true and the other mongrel. And of motoring, also, there are two sorts, as well as several others. Some men motor for pleasure, some in order to keep an appointment, and some for often the one purpose and occasionally the other. With the hotel or hydro at the chosen holiday resort, the shooting lodge—it may be near a Derbyshire moor or a Yorkshire, or it may be a Scottish Lowland moor or a Highland—the river that boasts the most sporting trout or salmon, or the golf links that are links indeed, not mere bunker-decorated lawns—whereas others set greater store by the journey than the journey's end. For which the roundabout are deserving each of a measure of respect. The Shap road is not distinguished on the count of scenery, and usually for a stretch of four or five miles, on the climb



Climbing Honister Pass on the "unclimbable" side.

nearly high enough and quite wild enough for mountains, are commonplace, whereas the fells between which the alternative road mostly threads its narrow way from Windermere village, through Ambleside to Keswick are possessed of the rugged outlines of mountains. Harrison Stickle and Pike o' Stickle—commonly called the Langdales—those twin fells that cut so noble a figure from here a point and there a point on the road from Windermere village to Ambleside; Loughrigg, of the shaggy mane, by which the head of Windermere, the

lake, is glorified ; the fells in whose embrace the lovely vale of Grasmere nestles ; the bulwarks of the mighty Helvellyn—they hem in Thirlmere on its eastern side—and the outer walls of the Borrowdale fells, above Derwentwater, to say nothing of old Skiddaw, up which your eye may rove from your bedroom window at Keswick—all these, however they may fare in the matter of altitudes as expressed in statute feet, are of the mountains mountainous, each with its own sharp outline, an outline that, while not in all cases as bold as the outline of the Langdales, is nevertheless sufficiently bold to endow its owner with individuality.

It is not, however, by the fells alone, their sovrain majesty, that the 22-mile stretch from Windermere village to Keswick is made glorious—so glorious, indeed, as, length for length, to beggar nearly every other of the many very beautiful roads of England. Not for nothing is Lakeland so called. You may love Derbyshire, yet deem the definition "the Switzerland of England," as applied to the dales region of Derbyshire, to be just a piece of "igh falutin," and scoff at Sir Arthur Quiller-Couch's pet name for his beloved Cornwall, the "Delectable Duchy"; with the Trossachs you may find yourself disappointed—probably the fault will be Scott's, not the Trossachs'—but that Lakeland is a right proper definition of parts of Lancashire, Westmorland, and Cumberland you will assuredly be convinced by the time you have rolled down Castle Hill into Keswick, unless, alack! you are either colour-blind or myopic. Windermere, Rydal Water, Grasmere, Thirlmere, Derwentwater ; to take them in their order, are all in more or less—generally more than less—fine view from the road, and of those five lakes not any two are alike, nor even do they closely resemble one another. All are fine, but each with a fineness of its own sort, imposed upon them, to an extent but by no means wholly, by their guardians, the everlasting hills. No wonder, then, that on all the itineraries issued by the Routes Department of our Association the two ways from Kendal to Carlisle are given—the way for the man who is in a hurry, perhaps perforce, and the way for him who travels for a host of reasons that may conveniently be summed up as

travel's sake. The writer has known Lakeland, man boy, boating and fishing and tramping and cycling and motoring, these forty years and more; yet—or should we not say therefore?—never, except under compulsion, would he neglect the roundabout way northward—ho! to Carlisle for the direct. For the glory of the way through Lakeland is not to be measured even by seasons. It is an ever-changing glory, as changeful as day to day, weather to weather, even hour to hour. And as the road is a road of infinite variety—so will it remain as long as the climate continues humid and our weather a thing of sample.

MORE FUEL ECONOMY TEST OPINIONS

From the A.C. Sparking Plug Co., Ltd.

We feel sure that to gain the attention of the motoring public to the possibility of economising in their motoring is a matter in the right direction. We also consider that it will be of even greater interest—and perhaps larger advantage—to the commercial vehicle owner.

The average private motorist is sufficiently alive to the value of the open road to almost go to any sacrifice to keep it in commission. At the same time, with the present heavy taxation and high price of everything appertaining to the car, there is no doubt that he will be intensely attracted by any scheme by which his expense may be reduced. This, possibly, will particularly appeal to the owner of the small car, cycle-car, and motor cycle, and to the man who is hesitating to join the ranks of the great motor community.

In the case of the commercial-vehicle owner, who may run a large fleet, and where every cost has to be cut to a minimum, all possibilities for the effecting of economies, however small they may be, will produce in the aggregate a substantial decrease in the yearly expenditure sheet.

You may rely that we will give our whole-hearted support to any scheme which you may formulate for the benefit of the motorist, and tender sincere wishes for the success of your crusade.

From Enfield-Allday.

We consider that any scheme which will demonstrate to the public how much more economically they can motor must be of great advantage and widen the field of likely users. The life of the motor is also a point which might be studied with advantage.



Lakeland roads vary considerably as to surface. This is a good example.

MOTOR POWER ON THE ESTATE.

An explanation of the intricacies of the new taxation scheme.

THE average motorist by this time knows clearly enough what are his obligations under the new scheme of taxation, but when the motorist in his capacity as a landowner wishes to employ self-propelled machines other than ordinary motor-cars he is liable to find himself out of his depth. The whole scheme of taxation is so confusing, and the notes attached to the various forms to be filled in are so contradictory, that any one might be excused for making the mistake of paying a good deal more than the amount for which he is really liable.

The buyer of a tractor or agricultural engine need not worry much about taxation, provided that the machine is required only for strictly agricultural purposes. In that case the proper payment is the nominal sum of 5s. per annum, but a licence taken out at this low rate is naturally issued under strict conditions. The tractor or other machine to which it is applied must not be used for general haulage purposes on public roads.

When on the road it may haul nothing except its own necessary gear, farm implements, thrashing appliances, or supplies of fuel and water either for the vehicle itself or for agricultural purposes. The underlying idea is that a machine of this kind is not really a user of the roads and, therefore, should not pay towards their upkeep. It must, however, be allowed to move along the roads, taking itself and its gear and implements from one field to another. Consequently it is charged a nominal fee for a trivial use of the road.

Directly it is required for use as a tractor for general haulage purposes on the roads the tax goes up immensely.

A machine weighing not more than eight tons must pay £25 per annum. A road locomotive between eight and twelve tons pays £28, and if exceeding twelve tons it pays £30 per annum.

There is, however, another provision under which tractors and similar engines may be used for a limited class of haulage on the roads by payment of a lower fee. The average agricultural tractor weighs well under five tons. In that case, £6 per annum is the correct payment if the tractor is to be used not only upon the fields but for road haulage work solely in connection with agriculture.

The position as regards the great majority of farm tractors is, therefore, as follows:—

(1) If the tractor is never used for haulage except of its own implements from field to field, 5s. a year.

(2) If used for road haulage, in connection only with agriculture; as, for example, taking products to the market or bringing farm supplies from the station, £6 a year.

(3) If used for general haulage as, for example, driving a load of furniture to its owner's house, fetching personal luggage from the station, and so on, £25 a year.

Of course, if a machine is only used on private ground and never goes on to the road at all, it is not taxed. For example, there would be no need to take out a licence for a motor mowing machine used solely on one's own lawns and tennis courts and never touching a public road.

Next as to vehicles of the class of wagonettes, shooting brakes, estate lorries, and so on. In respect of these the position is often more doubtful, not as regards the law itself, but as regards the apparent inability of many taxation officers to understand the law that they are supposed to administer. If the estate owner keeps a motor van or a purely for the cartage of goods, with a view to the

profitable running of his estate, then the vehicle is classified as a commercial goods vehicle and should be taxed on the basis of unladen weight. In ninety-nine cases out of a hundred, however, the estate vehicle is used for general purposes. It may, perhaps, be fitted with a lorry body and sometimes used for the carriage of goods or produce. At other times it will go to the station with or for luggage or household supplies. Sometimes it may be fitted with improvised seats for conveying beaters to a shoot, workers to a distant part of the estate, or for taking employees and their dependents on pleasure trips.

In these circumstances the legal position is just the same as if the machine were of the shooting brake, wagonette, or private 'bus class. The only legal way of getting it licensed is by a payment on the basis of horse-power. As a rule the horse-power of a machine of this class need not be high, because big speeds are neither desirable nor necessary. The chassis may be that of a 25 cwt. van, having perhaps a 16 h.p. engine. In this case, the tax is £16 per annum.

The point to be noted is, however, that if the vehicle looks like a van and is sometimes used for the carriage of goods, the taxation officer is quite likely to decide wrongly that it should be registered as a commercial vehicle on the basis of unladen weight, in which case £21 per annum would have to be paid, the weight being above one ton. In order to get the thing put through without trouble, it is advisable to describe it as a car used for general estate purposes and not as a van. In point of fact, it would not do to have it registered as a commercial vehicle, because in that case, when it came to be used subsequently for the carriage of passengers, the owner would be liable to prosecution by the police for employing the vehicle for a purpose for which it was not licensed.

Thus, if the estate owner wishes to get off fairly cheaply in respect of taxation, he will select for his general purpose vehicle a chassis of quite moderate horse-power.

There is also a possibility of misunderstandings if the vehicle is of the 'bus or wagonette class and is fairly frequently used for the carriage of passengers. If it is described to the taxation officer as a station 'bus, he may assume wrongly that it ought to be registered as a hackney carriage. In that case the tax would be a high one. For example, if seats were provided for fifteen people, the tax would be £36 a year. Any suggestion of registration on this basis should be opposed, because the vehicle legally is not a hackney carriage, which is defined as a vehicle let out for hire by any one whose business is the sale or hire of vehicles. Equally certainly it is not a commercial goods vehicle, and thus the only licence that can properly be held is that which puts it into the class of the ordinary motor car. In this class, as already mentioned, it pays £1 per annum for every horse-power.

In a few cases, electrically propelled vehicles may be used for general estate purposes. If not employed solely for the carriage of goods in the course of trade these, whatever may be their weight or power, get off with a light tax of £6 per annum, and any attempt of the authorities to classify them so as to make them pay a higher amount can be quite properly resisted. The average estate owner does not, however, find the electric vehicle convenient unless he has his own electric lighting plant and equips it with the necessary apparatus to enable the vehicle batteries to be properly charged whenever this is necessary.

TIPS AND TIPPING:

TIPPING, from which none on earth suffers more acutely than the motor-owner, is the very opposite of the quality of mercy. For of the quality of mercy we are told, authoritatively told,

"It is twice blessed:
It blesseth him that gives and him that takes,"

whereas of tipping we might be told, with equal force, and not less authority, that it is a double curse: a curse to the tipper and a curse to the tippee. It makes, or tends to make, of the one a snob; and of the other it makes, or tends to make, a varlet, a flunkey, a myrmidon, a beggar-man. And so, to carry the analogy further, of tipping it can no more properly be said,

" 'Tis mightiest in the mightiest,"

than it can properly be said of green apples that they are efficacious against a stomach-ache, as indigestion used to be termed in the youth of the world.

TWO SORTS OF TIPPERS.

Tipping "mightiest in the mightiest," forsooth! It would be nearer the mark to say that the practice of giving gratuities to servants and others—I have borrowed the phrase from my friend, Ponsonby-Smith, who runs a Labour Exchange at Neverhasten-in-the-Wold, and so has time and to spare (paper, too, for that matter) for long words and rolling phrases—tipping, I say, is mightiest in mean fellows, and, moreover, it is, in its commonest forms, an invention not of belted earls and such-like puissant folk but of sorry knaves and abject cowards. One motive in tipping is surely to assure oneself of the liver wing, or otherwise to get the better of one's neighbour, and another—take the case of your over-liberal-handed fellow—is to ensure the tipper against being mistaken for a son of the poor but honest parents of the story-books. The mightiest tipper of my acquaintance is at heart (to say nothing of in pocket) as mean as they make 'em. I can, thanks to a fairly elastic imagination, see him giving a lame dog a lift over a stile, though not if the dog's collar were silver-plated. In such a case my own particular mightiest tipper would take the collar and let the dog go hang. My friend Blank, on the contrary, for all his money—he really has an uncommon pile—and for all, remarkable to relate, he is not afraid of his money, is a most careful tipper.

Blank tips, generally speaking, as some men have tried to break the bank at Monte Carlo and as others would have their wives keep the household accounts—those wretched bare and brittle bones of contention. He tips, as I have hinted, on a system. Whether the system is described as single entry or double is neither here nor there. The System itself is, I venture to suppose, of greater import to the much-harassed motor-owner than its terminology, and I am so far unblameworthy that, while I have forgotten the name, I remember the system. Also I remember, I remember the house where I was . . . Sorry!—Also I remember Blank's having told me that he learned of the system years ago in one of those usually unadorned and in cases downright dismal chambers that, common to the hotels of our English country towns, are held sacred to a class that has chosen to dub its members, however mistakenly, how certain grandiloquently, "Modern Knights of the Road."

On the advantages or otherwise of distributing largesse by system as a means of securing hotel comfort when in town.

It was in the spacious days when, happily—on from one's own point of view—the gentlepeople of ate their home-fed bacon themselves, and the p Stilton, as well as of Devonshire butter (to say not Cumberland ham) was one-and-four a pound—it say, in those days of peace, plenty and laughter Kaiser's histrionics that my friend Blank learned, casual like," of a system of tipping that has stood in a traffic with a long and perverse generation of both head and headless; of porters, whether brass or no; and of chambermaids of varying degrees spick and span, a few slatterns, and a many a go-between.

My friend Blank told me, too, I remember, that occasion when he was initiated into the System of the incandescent burners in the unadorned had gone agley, whereas on the previous night (when one sin or another he was quite unconscious of, he spent in a commercial room) two burners had been of gear. Moreover, while on the first night both the leathery, alleged "easy chairs"—one on the east the fireplace and the other on the west—were occupied his arrival, and continued to be occupied till that hour commonly called "Time, Gentlemen, Please." the second, the night when he attained to a knowledge of the Complete System of Tipping, Blank had been secure one of the two so-called "easy chairs"—the west side, I think it was. But whether it was the "easy chair" or the sunrise, no matter. The important thing is that my friend's luck was in that night. He told me, the leather seating less chilling than anticipated, and the springs in less bad fettle than usual. And so he, at his comparative ease, after a resistance in force against the occupant of the opposite of state, adventured, in his best manner, on a "Thank you, sir, we shall have rain in the morning?"

A HALLOWED INTERROGATORY.

Now that interrogatory is older in these islands, or to remember having read, than the Norman Conquest than the story of Alfred and the spoiled muffins (or was crumpets?), older even than the Arthurian Legend has been used as an opening gambit in commercial since the Palæowhatdyecallit Age, and yet—would you believe it?—once again it "caught on." The Knight of the Road—he had a very bald head—in the opposing courtesy-called-easy rose to the bait with all the grace of the silliest troutlet in Avon, or Itchen, or Test. He explained later, he himself, when at home, always with readings of the thingummy on the grass and tapping the glass in the hall. And so, at first interested in himself as a full-blown Amateur Meteorological, he later, after many a "That reminds me" and "Mind the bell?"—he later, I repeat—it was 1.35 a.m. exactly—let Blank into the carefully guarded secret of the Complete System of Tipping. "Give 'em," explained the venerable Knight of the Road (old style), "ten per cent. according to the bill, and if they are not satisfied let 'em be—(one boggles at printing the word in a journal that has a Ladies' Page).

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with Sterling Silver Fittings. £12 12 0



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The quiet refinement, excellence of construction, unusual comfort and maximum economy are amongst the many reasons for the rapidly increasing popularity of the ASHTON car. Every ASHTON car sold must not only fully maintain our established supremacy, but carries with it the unlimited resources, endurance and service of a world wide reputation for efficiency and excellence.

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“Albert”

MR. GEO G. MITCHESON

THIS MONTH'S CARTOON.

Mr. G. G. Mitcheson, Managing Director of the Service Motor Co., Ltd.

AT 94, Great Portland Street, W., there dwells an optimist—Mr. George Gibson Mitcheson, managing director of the Service Motor Company, Ltd. As to the reason for this somewhat unusual attitude we must seek it in Mr. Mitcheson's singularly cheery outlook on life. For to him business is a pleasure—he revels in work—real work that is not confined to a daily eight hours.

Born in the small town of Heckmondwike, near Leeds, Mr. Mitcheson qualified as a solicitor in his father's office. Quickly realising that legal practice in a small town offered little scope for his enthusiasm and organising abilities, he came to London and acted for some twelve months as solicitor with the Car and General Insurance Co., Ltd., afterwards accepting an appointment in Newcastle-on-Tyne as solicitor and manager for the North of England for the London Guarantee and Accident Co., Ltd.

There he interested himself in politics on behalf of the Unionist cause, being for some time a prospective candidate for a northern constituency.

Some four years ago he returned to London, and, at the request of certain prominent motor traders, formed on behalf of the motor trade, the United Motor and General Insurance Co., Ltd., of which he acted as general manager, secretary and solicitor, the extraordinary success of his efforts in this direction being well known.

A couple of years later Mr. Mitcheson purchased the whole of the output of the famous Albert car for a period of years and formed the Service Motor Co., Ltd., of which he acts as managing director, to deal with the distribution. Although an optimist Mr. Mitcheson does not deny that the industrial outlook is less bright than it should be, but nevertheless he is throwing his whole force and personality into an endeavour to make things at any rate a little better, believing that if everybody would work for good times instead of grumbling about bad times, things must immediately improve. He is enthusiastic over work as he is over sport, bringing to the more sober pursuits of life something of that zest that in his younger days animated

Our usual Cartoon, of which Mr. Mitcheson is the victim, is issued as a supplement to this number.

THE OPENING OF THE BROOKLANDS SEASON.

IN spite of a good deal of adverse criticism in the past, the Brooklands Automobile Racing Club is continuing undauntedly to provide its own particular sort of motor sport.

The B.A.R.C. deserves a certain measure of sympathy—it has been persevering, it has achieved success greater than the uninitiated are aware, and it has done that for the motor trade which no other institution could perform. In addition to all this, it appeals to that human instinct that delights in the spectacular. And the Easter Monday programme should provide thrills for a Bank Holiday crowd if it doesn't, one will be compelled to invoke the aid of something in the nature of G.B.S.'s next-stage-beyond man.

Eleven events are to be held, of which four are short handicaps, distance about $5\frac{3}{4}$ miles, and three are long handicaps, about $8\frac{1}{2}$ miles. Also included are a couple of

him at football and boxing. One gains an insight into Mr. Mitcheson's methods from the very name of his firm—service is his motto; a sort of putting yourself into the other fellow's place, visualising exactly his requirements and then fulfilling them. For it is that attitude which made him an outstanding personality in the world of insurance formerly, and in the motor industry to-day.

It is not enough merely to sell a man a car or any other commodity, Mr. Mitcheson argues; far more important is it to make him feel that his interests are still yours, even though you have taken his money, and that he can continue to count upon your assistance and advice. A car is not sold until it is dying a natural death from old age. To give his clients the fullest satisfaction is Mr. Mitcheson's aim. As an instance of this, a careful and very exhaustive manual written in non-technical terms is supplied with every Albert car, instructing the owner in the fullest measure in the care of the car and how to avail himself of the firm's system of service, immediate supply of spare parts, inspections, etc. Every part of the Albert car is illustrated, numbered, coded and priced, the weight also being given, and every part is delivered by the first means of transit after the request is to hand. Even complete bodies may be hired, and in every way possible the client is made to feel that the Service Co. takes a pride in continuously pleasing its customer and consistently maintaining every Albert car at high efficiency.

We instance this service as an indication of the lines upon which Mr. Mitcheson works. He is sufficient of a psychologist to study his fellow workers with understanding, and sufficiently confident in his opinion to treat them as reciprocative to kindness. A man with a grievance has never yet been known to give of his best. Only half man's value is purchased by money. The other half is by treatment.

At any rate the cheeriness which pervades the brains of the enterprise at 94, Great Portland Street extends to every floor of the building, where service—the best service—is the slogan.

sprint races, both handicaps, and short, being only two miles in length. The remaining car event is a three-litre scratch race of $8\frac{1}{2}$ miles, while for cycle-cars there is a $5\frac{3}{4}$ mile handicap.

For the short handicaps entrants are classified as follows: cars whose speed is at least 70 miles per hour, cars five miles an hour faster, and cars which can do at least 90 miles per hour. The other short handicap is not governed by speed, being open to light cars without such distinction.

The three long handicaps are governed by speed in the same way as the short handicaps, and the sprint races are restricted to cars which have done flying laps at about 70 miles per hour.

Entries for the various events close on the 14th inst., a number of prizes is offered, and the meeting commences at 12 noon.



The Earl of Mayo, who has always been a keen sportsman and lover of horses, follows the hounds with unabated ardour. Here he is seen at a meet of the Kildare Foxhounds.



Little Miss Alva Burbidge takes a critical interest in the proceedings...

Has the motor-car "speeded up" our social life? It certainly has had that effect commercially; and we should say that Miss Queenie Thomas could not get through the list of her day's engagements, which she is so cheerfully consulting, by any other means than by car.



"Twelve pounds for this!" Mr. Leslie Henson doesn't know whether to be amused or annoyed, but he and his wife, better known as Miss Madge Saunders,





...While Miss M. Buller prefers a more active part and exalted view.



H.R.H. The Prince of Wales at the Household Brigade Drag Hunt at Shottesbrook Park, near Maidenhead.



who is at the wheel, have at least the satisfaction of knowing that in choosing an Albert the new taxation does not hit them so hard as it has done some people.



A film actress in her time plays many parts and acquires skill in many varied pursuits. Apart from the "movies," however, Miss Alma Taylor is not only an enthusiastic but a skilful horsewoman.

THE ECONOMICAL DORT.

A "Family 'Bus" for the Man of Moderate Means.

THE nineteen-point-six rating of the Dort car is a striking example of the absolute inefficacy of the R.A.C. and Treasury formula for determining horse power. In these days of tiny and highly efficient engines, 19.6 h.p. is in some senses quite a lot. It would be quite a lot if developed by one of the modern super-efficient engines in the type of chassis which generally carry them; but the Dort—and especially the model we tried, an interior drive, five-seated saloon—is essentially a family 'bus. It is roomy and robust, and at a glance one would undoubtedly write the car down at something in the neighbourhood of thirty h.p. Thirty—and more—the engine undoubtedly develops; yet its dimensions give 19.6 h.p. by R.A.C. rating.

We tried the car up a series of our favourite test hills and found it not only a sterling hill-climber when driven with the idea of making a good performance as a prime consideration, but equally good when put at a hill in casual fashion. It possessed the ability to "hang on" to a gradient in quite unusual degree, and was, in fact, an easy car to drive in every sense.

We started on our test with the impression that price considerations would have to be taken into account in judging the car's performance, for undoubtedly a "family 'bus" of prepossessing appearance at £495 is very considerably on the cheap side. We should not have quibbled at a reasonable degree of coarseness in running and finish, but we quickly found that, while the car is quite frankly American in regard to the material of the upholstery and externals generally, on performance and mechanical details it is able to stand criticism entirely on its merits, with complete disregard for the question of price.

The Dort car, we should imagine, would provide an interesting subject for the British engineer to study, for there are details in its make-up which would almost cause one to believe that the ultimate retail price of the completed article was not borne in mind in the designing of the car. This, obviously, is not the fact, for the production of such a car at £495, after all the expense of putting it on the British market is cleared, shows that the designer had the dollar-sign very much before him all the time.

During our test the speedometer unfortunately went out of action, so that we are not able to say what is the actual maximum speed of the car. Incidentally, except on hills, we did not have her "all out" at all. It did not seem

necessary, for we should estimate that the car, saloon notwithstanding, is capable of a steady 35 to 40 miles an hour with comfort. At that speed there is plenty of reserve movement on the accelerator pedal, of which, on great roads, we did not feel inclined to take advantage.

We have already mentioned the smooth, effortless—almost intelligent—running of the engine, but we should add that the silence of the power-unit is equalled by that of the gears and final drive. Nothing is better calculated to bring to light irritating noises of either engine or transmission than an enclosed body, especially to a "tester" who is little used to that type of coachwork, but in this case there was absolutely no sound that was in the least degree annoying. We will not go so far as to say that the car was unusually silent, for it had seen a fair amount of use and the particular body was more or less experimental. There were body sounds which will not be present in the standard product, but so far as chassis noises were concerned, one was merely aware that the engine was running and that was all.

The Dort, we found, had a further good point of considerable importance at the present moment—it is remarkably economical in fuel consumption. We were told before leaving Messrs. Whiting's that the car that she would do at least twenty-five to thirty gallons, but, to be honest, we did not pay a whole lot of attention. We should, in fact, have been quite content with 15 or 18 m.p.g. in view of the type of body work, the state of the roads, and so forth, and consequently did not set out to test this particular feature

of the car's running. At the conclusion of the test, however, when we finally reckoned up mileages covered and petrol used, we found that twenty-five miles per gallon was as nearly as possible the average consumption while we had the car.

It must be admitted that this is distinctly good in view of all the circumstances, and it removes the possible objection of our old friend the "man of moderate means" that, while he might afford the low purchase price of an American car, his income would not stand the running expenses. Economical running plus a comparatively low taxation figure, taken in conjunction with the attractively small capital outlay involved, make the Dort a most suitable car for the motorist whose desires and requirements are barely matched by his income.



An effective Dort coupé.

SOME DORT DETAILS.

Engine	..	4 cyl.	Gear box	3 speeds, central change.
Bore	..	3½ ins.	Clutch	Leather-faced cone.
Stroke	..	5 ins.	Petrol feed	Stewart Vacuum.
Starting	}	Westinghouse electric.	Tyres	30 ins. x 3½ ins.
Lighting				

By appointment

to H.M. the King



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The Representative British Car

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6 Cylinders.

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: Coventry :

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WOMAN AND THE CAR.

By LENORE MAUDE.

"La Mode" is treating us tactfully, and fashion prophets need to walk warily, for many women frankly refuse to give up existing styles.

Decorations by Gladys Peto.

MARCH to the male mind is a month fraught with apprehension! Horrors more nerve-racking even than the January Sales lurk darkly at the back of his mind. But as soon as the dread words "Spring-cleaning, dear!" are uttered, he knows that sentence has been pronounced, his hours of peace are numbered, and for many days, perhaps weeks—seeming like months—his home will no longer be his castle! He will be cast forth into the outer darkness of clubs, since even clubs are outer darkness these days, as in most of them there is the terror of feminine guests, who talk spring-cleaning in penetrating voices against which even an extended copy of *The Times* is not proof!

However, things are nothing like as bad as they used to be, for with the advent of really efficient labour-saving devices even a London house is comparatively easy to keep clean. It must in justice be admitted, too, that the much abused "servant" of to-day is usually far more willing to avail herself of these advantages than was her predecessor, who would promptly give notice the minute a vacuum cleaner appeared, because she "didn't hold with them nasty things!" Undoubtedly

at this particular season, the vacuum cleaner is, or should be, our dearest friend, and the latest examples of sweeper and vacuum combined, with motor-driven brush and a goodly supply of accessories should really save us quite a number of incipient gray hairs by curtailing the much-dreaded spring-cleaning season.

Quite an inspiration, by the way, when trying to persuade the head of the house to part with the necessary cheque for an electric cleaner, is to remind him that the "accessories" will not only contribute to the effective brushing of clothes (dress suits in particular), but brushes, etc., can also be obtained for cleaning the upholstery of the car, and that gets so very dusty with all the March winds about.

Talking of March winds brings me to another matter. They are apt to be bitterly cold, and after so comparatively mild a winter we shall probably begin to enjoy skating about April. I secretly wondered last summer what happened to those Spartan Early Victorians who refused to light fires from the first of May until the first of October. Such a summer is very unfair in the matter of clothes too! Quite upsets a lot of one's programme in that direction. Yet by March we are sick to death of winter attire, and for some of us the winter attire is beginning to look as if it also had had nearly enough of it! However, with a sharp nip in the air, to discard these garments for anything much lighter would be indiscreet and possibly unbecoming.

Qu'importe? There is always the new hat to stave off our impatience, and this year how very attractive they are! The early models readily fulfil our longing for gay colours, and some of the most becoming specimens for town wear are on supple frames covered with crêpe de chine or satin, trimmed with a swathing of their own material, and almost always this swathing overhangs the edge of the brim, American-wise, as happens also with the more elaborate and feather-trimmed creations. Straw hats, however, strike out in quite a new and pleasant direction. Already there is a marked tendency among the early ones to rolled or doubled edges, taking away the rather sharp outline with which one has been accustomed to associate this style of headgear. Since, too, the rolled edges are frequently of a colour contrasting with the rest of the hat, trimming is of the very simplest, quite suitable for the vagaries of early spring weather.

A March Easter, though greatly to be appreciated after the long and weary winter, certainly seems to precipitate things a little for some of us. There has hardly been a

What happened to those Spartan Early Victorians who refused to light fires . . . ?



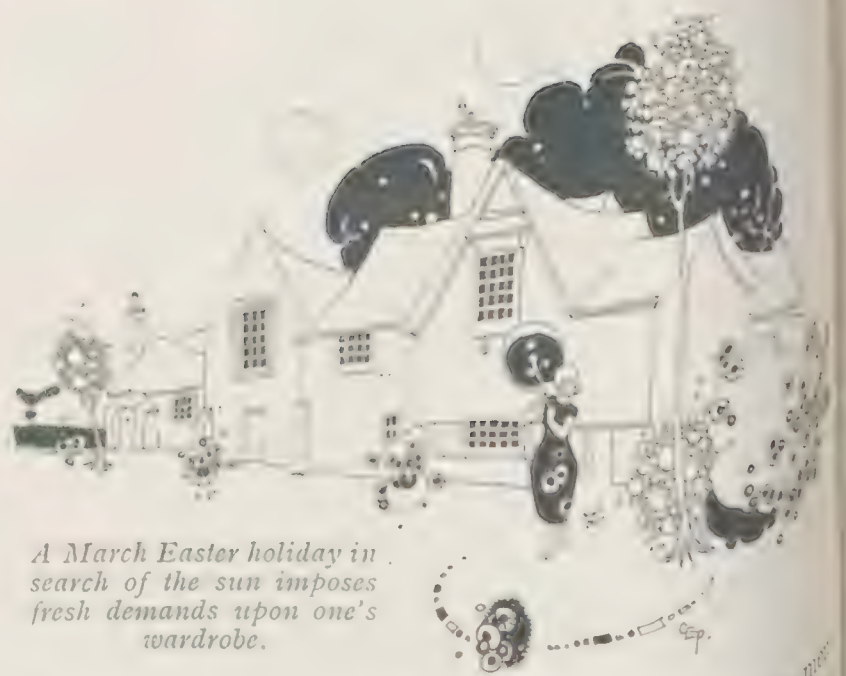
By March we are sick to death of winter attire, but there is always the new hat to stave off impatience.

lull since the Christmas rush, the sales, spring-cleaning, and now the Easter holidays, with very often young people to be considered as well as older ones. A holiday in itself imposes fresh demands upon one's wardrobe, as for those who can afford it the exodus usually takes the form of a pursuit after that elusive quantity "sunshine." The selection of materials at the sales, however, was so wide and the reductions so inclusive that the discreet purchaser with an eye to future needs must have achieved considerable results for her outlay, and be prepared for the emergency of almost any kind of holiday.

The spring models are showing what might be best described as an inclination to depart from our beloved "chemise" outline, but even *la mode* is treating us very tactfully on the subject, and fashion prophets need to walk warily, for this particular vogue has proved so becoming that many women frankly refuse to give it up, and, indeed, in its numerous variations it has remained universally popular for an unprecedented length of time.

Another, and rather less apparent, reason for our fidelity to this style of dressing may be found perhaps in the modern woman's love of comfort and freedom in her strenuous life of to-day. Having discovered the joys of a soft *ceinture* in silk or elastic, she is by no means eager to return to the severity of steel and whalebone, which might be necessitated by any very drastic changes in the fashion of gowns. Nevertheless, skirts are getting a little wider, and perhaps fewer are extremely short. For smarter occasions they are often draped, or arranged with panels, and there is nearly always some arrangement of a sash, for which the gorgeous oriental-coloured ribbons are well suited, and afford distinction to an otherwise sombre turn-out.

Where evening frocks are concerned it is safe to say that the day of the low "vee" back is over, and the best models are showing the rather arresting contrast of a *décolletage* straight across from shoulder to shoulder, or else an oval effect. Also, the majority of them are sleeveless. For that invaluable garment the semi-evening gown, however, I have seen some delightful specimens with bishop sleeves, in a transparent material; a fashion so practical and becoming that it may well find a considerable following, especially among those not in their first few seasons. There is, in fact, already more than a suggestion that this spring we are to rely on the more delicate charm of transparencies, rather than on the erstwhile ultra-frank backless, sleeveless, and generally scanty effects.



A March Easter holiday in search of the sun imposes fresh demands upon one's wardrobe.

While on the subject of evening attire, it may be mentioned in passing that "headache" bands and other forms of hair decoration are still very much to the fore, and afford the artistic woman an opportunity for expressing her taste and individuality. To the younger women, whom quite a number have remained faithful to the "bobbed" *coiffure* so convenient for all sports, this fashion for hair bands should come as a real blessing, since without it the short hair that is charming by day looks a little "unfinished" with an evening *ensemble*.

Cloaks, it is surprising to relate, are still with us, though taking unto themselves, perhaps, some of the characteristics of the wrap coat. Coats, on the other hand, are mostly of the three-quarter length, and seem disposed to flare a little at the skirt, after the highwayman fashion. Two other old friends, from sheer indispensability, have survived their long-prophesied demise—the jumper and the knitted frock, either in silk or wool. For holiday purposes in particular these two garments are invaluable.

Some mothers make the fatal mistake of saying, "it doesn't matter what I wear; just ourselves in the car, try!" But apart from husbands, who are sometimes given to being more quietly appreciative than expressive, young children are far more observant than is often realised, and holiday time is a good opportunity for developing sartorial taste.



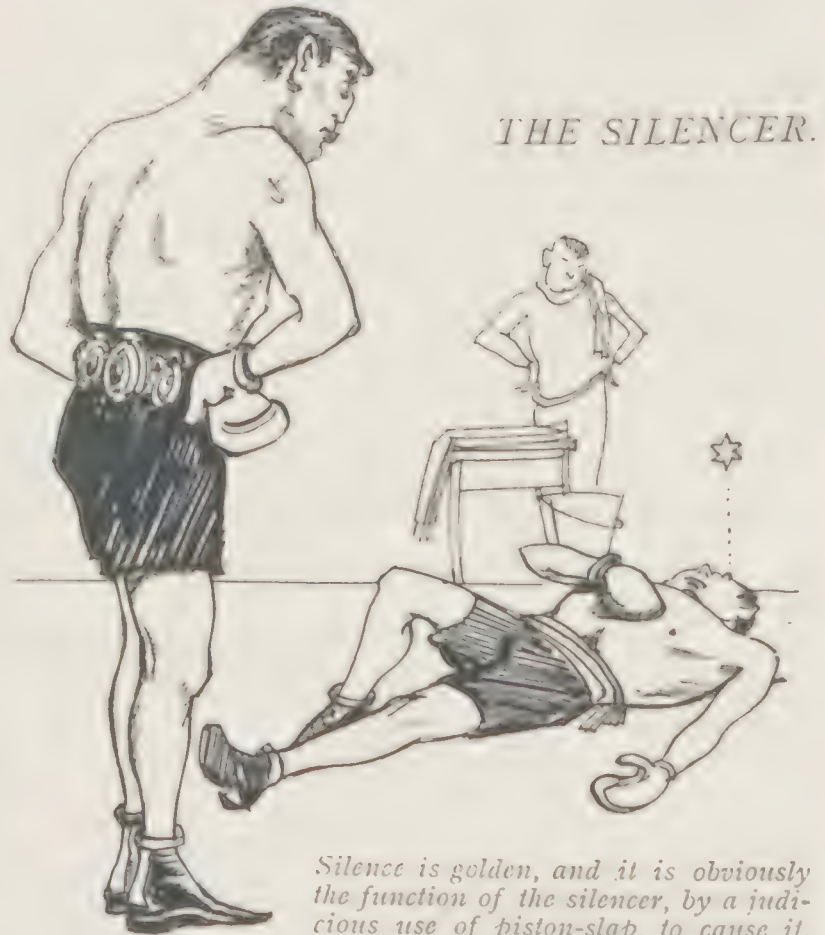
MORE MOTORING TERMS ILLUSTRATED

In spite of the characteristic modesty which "The Motor-Owner" shares with the rest of the British Press—the rest, of course, are simply nowhere, but, being charitably minded, we drag them in—we are assured that our pictorial motoring definitions fill a long-felt want. We therefore continue them, confident that our enterprise and public-spiritedness will be recognised without comment that might be considered immodest from us, although, were we not constitutionally averse from "blowing our own trumpet," much might be said in this connection.



HIGH TENSION.

High tension is the stuff that sometimes gives you a nasty jolt comparable only with that received at the terminal point of an unexpected fall from a high cliff. In its native state it is savage, but can be trained to do useful work about a car. In the event of a sudden attack by a wild H.T., re-tension of a cool and collected mind and at-tension to such details as the presence of ladies may prevent serious trouble.



THE SILENCER.

Silence is golden, and it is obviously the function of the silencer, by a judicious use of piston-slap, to cause it. Piston-slap, however, if used in too large quantities, is apt to adulterate the golden silence with silver stars. The one-star brand is particularly obnoxious, as further over-doses are usually required to induce complete silence. A severe big-end knock will often produce the desired effect, but is not to be depended upon as to the time and place of the resultant quietude.

A COMFORTABLE BODY.

Some people think that upholstery has much to do with the comfort of a body. It may be so, but as Scottish folk say, "Gin a body meet a body" . . . coming to a cross road, both chassis "gang aft agley." Gin (this g is soft, as in raspberry) is akin to Scotch in some respects as an aid to a comfortable body. But touching the matter of upholstery, it should be borne in mind that many a kind engine runs beneath a ragged pair of Pantasote-treated side curtains. If one wishes to lie Dorman-t as one Rolls along, one's mind a complete Vacuum, it goes without saying that one must Shell out pretty heavily for the body. So perhaps upholstery does matter.



That's that; and the new motorist ought to be grateful to us for telling him in a few minutes that which it has taken us years to learn.

THAT "30 M.P.H. AVERAGE"!

It is an elementary fact that there may be a very considerable difference between average speed and maximum speed, and yet a great many people quite unconsciously delude themselves as to the capabilities of their cars and the prowess of themselves as drivers. A twenty-mile average is quite useful and not too easy to maintain on a long run, while a thirty-mile average—well, see what the writer of this article has to say on the subject!

"I AVERAGED thirty miles an hour, coming from Brighton last Sunday," is the sort of remark one often hears nowadays. And it is not always made in a boastful spirit, either, for not infrequently the speaker really believes his statement to be true.

But now, in cold blood, let us look into what thirty miles in the hour really mean. Between it and the phrase "30 m.p.h." lies a very great difference, yet they are commonly taken to represent the same thing. And it is frequently anything but easy to persuade people to the contrary.

Now, while it is simple enough for modern cars to attain a speed of 30 m.p.h. at times, "it is another story," to quote Rudyard Kipling, to keep that speed up continuously, or, in other words, to cover a distance of thirty miles in sixty minutes. A little calm reflection will show the truth of my statement—for in one case the figure 30 represents the actual distance covered; in the other, it merely means "at the rate of," for a moment or so.

SELF-DELUSION!

Suppose that, during an hour's run on a 15.9 car, you notice your speedometer reading 30 m.p.h. occasionally. At once, in accordance with the peculiar law that makes us delight in extremes, whether maxima or minima, the figure 30 becomes fixed in our memories. And not only that: it colours the whole of the trip, until we come to believe we really have travelled the whole distance at that pace.

But it is not necessarily so—especially when the m.p.h. are higher, say 35. True, we may attain that figure easily enough for a brief period; but to maintain it as an average is a vastly different thing.

As there is nothing like a concrete example to teach, let us take the case of a man travelling from A to B—a distance of thirty miles. *En route* he touches thirty-five miles an hour for a moment or so, and this figure becomes magically centred in his mind, until it tinges the whole of his performance. So, the probability is that he thinks he has averaged at least thirty miles in sixty minutes.

Let us assume that the road happens to have two fairly steep up-grades, of one-in-eight and one-in-seven, with descents in like proportion, both inclines and declines being one mile long. In addition, on the level portions there are several pretty acute bends, amounting to eight miles in all. Their number doesn't matter, so long as we know what allowance to make for them. The straight-away level stretches, allowing of top speed, amount altogether to eighteen miles. That means that twelve miles out of the thirty demand reduced speed. Suppose, again, the vehicle is capable of 50 m.p.h. all out, there is, one would think, plenty of margin left to make up for the slow portions of the journey. Well, facts speak louder than theories; so let us see what happens.

The route consists of the following stages:

It commences with a straight and level stretch of seven miles. Then comes a mile-long hill, with an ascending

grade of one-in-eight. From the top the road descends at the same angle and for a similar distance, continuing over another hill of the same length, both up and down, having a grade of one-in-seven. Next, there is an eight-mile straight-away run, followed by an equal length of country lanes with short stretches and numerous bends. This makes a total distance of twenty-miles. The last lap, of three miles, is, we will say, perfectly straight and unencumbered.

Now, if we assume the whole route to be perfectly free from cross-roads, side-turnings, ten-mile limits and other traffic—which is, of course, most unusual—we may assume that the car is driven as fast as possible on every section of the trip. Here is a fair performance.

AN IMAGINARY RUN.

On the seven-mile stretch let it average 50 m.p.h. time will be 8.4 mins.

Up the first hill it does 20 m.p.h.—time, 3 mins.

Down the hill it does 40 m.p.h.—time, 1.5 mins.

Up the second hill its speed falls to 18 m.p.h., the time of ascent being 3.33 mins.

The descent takes the same time as before—1.5 mins. The next eight miles, being straight and level, covered at the rate of 50 m.p.h.—time, 9.6 mins.

The twisty portion keeps the speed down to 15 m.p.h. which gives us 32 mins. for this portion. So far, then, the time taken to cover twenty-seven miles equals 59.33 mins. But, to complete the thirty miles only '66 min. is available. Two-thirds of a minute is not much for three miles, but the car would have to sprint along the tune of 270 m.p.h.!

COLD LOGIC.

As the route indicated above is a pretty fair example of most of the English roads—at any rate of routes such as the London-Brighton road, which is just where I have heard motorists boasting of having covered thirty miles in an hour on a 15 h.p. car—the claim is obviously ideal support, especially as the conditions selected are ideal. It can hardly be realised in practice. A very high-powered car, driven at speeds that are risky, could, no doubt, achieve such a performance easily enough on a route of this sort. I myself, on a 65 h.p. Hotchkiss, once travelled from London to Edinburgh in exactly twelve hours, an average of 33 m.p.h. But in the case of moderate powers such as I have been considering, the betting is against success. Therefore, when a man spins yarns of this kind for me, I begin to wonder if our sex is losing its reputation for logical statements. And more than once have I proved to a boaster his inaccuracy, by acting as his time-keeper over a similar run while he did the driving. When handed over the stakes—which he invariably had to do—it was with a considerable amount of chagrin.

Thirty miles in the hour on the average road with 15 h.p.!

Non credo!

A. J.

Prices of SUNBEAM CARS

The Sunbeam Motor Car Co., Ltd., think it advisable to notify the public that it is quite impossible at the present time to offer their cars at any lower prices than those given below, which are their current catalogue prices. Should it be found possible to effect any reduction in these prices during the next few months, the Company would be pleased to refund to those purchasing now and up to 30th June, 1921, any difference between present prices and such prices as may then be current, upon application being made by the purchaser within one month of that date.

Sunbeam Models and Prices:

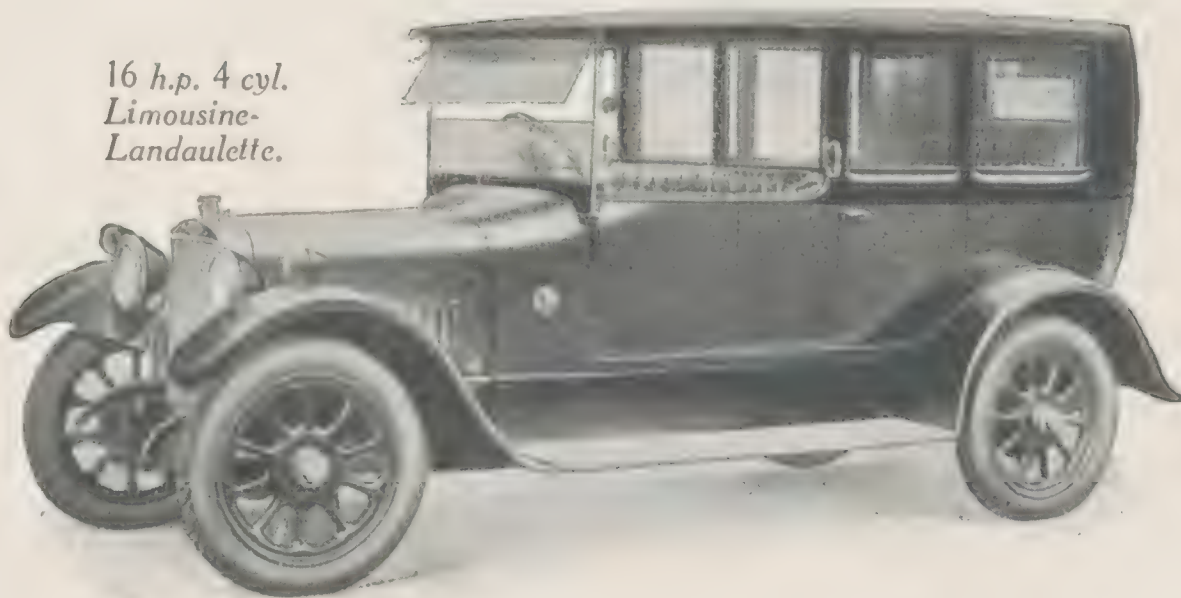
16 h.p. 4-cyl. Chassis - - -	£930
16 h.p. Touring Model - - -	£1,225
16 h.p. Semi-Sporting Model - -	£1,225
16 h.p. Limousine Landaulette -	£1,475
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24 h.p. 6-cyl. Chassis with Long Wheel Base for closed cars -	£1,240
24 h.p. Touring Model - - -	£1,510
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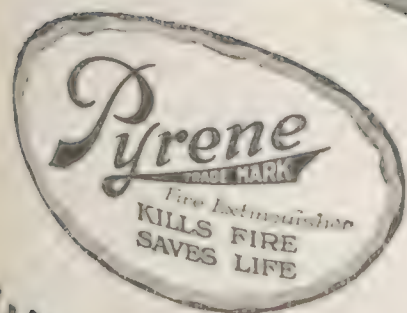


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ECONOMY TECHNICALLY CONSIDERED.

An Interesting Letter on a Vital Subject from
Mr. A. E. Parnacott, M.I.A.E.

THE following constructive remarks may be of service to you in your praiseworthy and far-seeing effort to reduce the fuel cost of motoring.

It is good in the case of the prime movers to ascertain the amount of energy in their fuel, find the proportion of that energy which is turned into useful work, when the difference makes clear the field for improvement. A gallon of petrol has enough energy to propel a two-ton car one hundred and eighty miles.

If the engine, in good condition, were always driven at its best speed and highest compression, and on full open throttle only, about 25 per cent. of the energy in the fuel may be delivered at the flywheel of the engine. However, gearboxes being such that their use is, and understandably, dummed, the engines on the more modern cars are run at far higher speeds than of old; which, in conjunction with the more general and more extensive use of the throttle (reducing the actual compression pressure in the cylinder), causes a much larger consumption of fuel for the energy available at the flywheel even to the extent of as much as two and three fold for given horse-power output.

The conclusion one can draw from these facts is that the miles per gallon could be materially increased merely by the use of different gear ratios, the high gear being higher, which, of course, would only be accepted now by the general public if the gears could be changed as easily, unconsciously, and silently as one functions the throttle pedal. Personally, I believe this is practicable.

LOSSES ON GEARS.

The losses of energy in practice, that is apart from laboratory tests, are so considerable on lower gears that there is also room for marked improvement in this direction. For instance, the losses in each train of gears in the gear-box of the conventional type is in the nature of 10 per cent., frequently more, and as with the top direct drive box there are two trains of gears, all gears other than the top lose 20 per cent. of the engine power. There are, however, further losses, frequently to the extent of 15 per cent. in the final right-angle drive, so that in actual practice the conventional car loses something like 40 per cent. of the energy available at the flywheel on the direct drive and 60 per cent. or more on the lower gears. This little survey is just to show what room there is for improvement, for we are very apt when on some delightful vehicle to think it has closely approached perfection.

However, I gather the purpose of your generous effort is rather to see what can be done to modify existing arrange-

ments so as to make the vehicle of convention run more miles per gallon. For a given design of engine, for given turbulence, compression, and richness of charge, a measurable interval is occupied between the passing of the first spark at the plug and the attainment of maximum pressure in the cylinder. In common practice, the pressure rises to something between three to five times the initial compression pressure. As, however, it is obviously desirable to get this maximum pressure early in the power stroke, it is clear that the timing of the ignition is of importance from the economy point of view. If the mixture is rich, the ignition need not be so advanced for given engine speed. With weak mixtures, so weak that they take longer to inflame, obviously the ignition should take place earlier, because of this slower inflammation, but such weaker mixtures are not only prone to misfire at the quicker revolutions but they take longer than the richer to rise to their maximum pressure, which is a reason tributary to the miles per gallon to-day being no better than those of one or two decades ago. The engines run quicker and are more throttled.

THE IDEAL "ECONOMY" CARBURETTER.

To summarise, when the engine is turning round slowly or at moderate revolutions, say up to 1,000 revs. per minute, mixtures can be on the weak side, and yet give within a few per cent. of the maximum horse power at that particular engine speed. However, at speeds roughly above this, the mixture may be richer to advantage. I am therefore of the opinion that with the conventional arrangements, the carburetter which will probably give the greater miles per gallon is that having the following characteristics, which I do not remember as being attained in any I have at present seen on the market; in fact, I feel inclined to design such a carburetter which some firm might like to manufacture. It seems to me that for maximum economy functioning should be as follows:—Control the engine speed by mixture impoverishment firstly and then by throttle. Let the control be such that the mixture is always poor, excepting at such times when maximum horse power output at the particular engine speeds is the desideratum. As roughly for a given output, excepting at very quick revolutions, the mixture may be, say, 10 per cent. weak and 30 per cent. rich, it will be seen firstly, that your statements, supported by the tests at Brooklands, are logical; and, secondly, that the above proposal may be expected to effect even greater economies in the official R.A.C. trials to which we all look forward.

A. E. PARNACOTT, M.I.A.E.

ECONOMY AND SUNSHINE FOR THE MOTORIST.

—By CHARLES L. FREESTON, F.R.G.S.

APPARENTLY there are still a certain number of people left with plenty of money in their pockets after the war, and in spite of post-war taxation. How, otherwise, are we to account for the fact that the annual exodus to the French Riviera has been maintained, and that Nice and Monte Carlo are almost as full as in the winter of 1913?

None the less the majority of people have only too potent reasons for considering ways and means, and for them I can conceive no greater folly than that of ignoring the Italian Riviera in favour of the French. Even in respect

Not only is the rate of exchange greatly in favour of the British tourist, but hotel keepers and

of beauty alone the advantage is on the Italian side; but when we enter into the realm of expense the contrast is nothing if not ludicrous.

At the time of writing the franc stands at 54 to the English pound and the lira at 106! Other things being equal, therefore, it necessarily follows that one can live nearly twice as cheaply in Italy as in France. But in actual fact the difference is considerably greater. Many French hotel-proprietors have doubled their charges in consequence of the exchange. If, for example, owing to post-war conditions, they would have to charge, say, 50 francs a day instead of 20, to make a profit, they put on another 50 to the Englishman in order that he should not benefit by the exchange.

In Italy the case is altogether different. The cost of food, of course, has forced up prices, as everywhere else, but although I went all over Italy and Sicily in November and December, I did not discover a single case of artificial charging with one eye on the exchange. To the English visitor, therefore, the cost is much lower than before the war. For example, at an hotel in Rome of the highest class the pre-war terms were 25 lire, or £1 a day; they are now 75 lire, which is less than 15s. And at Nice as much as 120 francs is being asked, or over £2 in English money.

The majority of people have only too potent reasons for considering ways and means, and for them I can conceive no greater folly than that of ignoring the Italian Riviera in favour of the French.

I know one where 45 lire would procure a first-class room of sumptuous dimensions with a private bathroom. It was nothing even at San Remo above 80 lire, and possibly at this, the most fashionable resort on the

But there are hundreds of good class and charming surroundings where one may live at something from 25 to 40 lire a day. The prices may have advanced to 100 lire by the largest hotels, what is 100 lire compared to 120 francs? Meanwhile every effort is made on the French Riviera to keep English visitors from entering Italy. The most

others are not so determined as their French brethren that they should not benefit by

convenient trains are put up at Mentone instead of proceeding, as of yore, through to Genoa and beyond. False reports are spread to hotel charges, and pictures are drawn of British tactics, and even of English feeling. As an eye-witness of the state of things in Italy I can declare all these statements as dacious and absurd. It is not a pleasanter or more desirable region in France at the present moment than the English visitor that one

Italian Riviera, from every point of view save that of the golfer. As an ardent devotee myself I admit the importance of this exception, but after all it only applies to a particular section of the community. I should explain that there is a golf course at Taggia, near San Remo, but during the war it was occupied as an aviation camp; however, it is being put in order again, so that the disability is to be regarded as a permanent one.

None the less one could forgo even golf for the sake of enjoying the amazing beauties of the Ligurian coast—all but sempiternal sunshine, the glorious wealth of flowers and the azure waters of the tideless Mediterranean—coupled with a cheapness of living that has no equal anywhere west of Germany. And above anything else, perhaps, must rank the extraordinary variety which



A view through the Bisagno Valley from Dintorni, on the outskirts of Genoa.

Italian Riviera offers in the way of resting-places. And the motorist enjoys a paramount advantage in this respect over railway travellers, for nothing could be simpler for him than to saunter along the coast and pitch his tent at any point that struck his fancy. If he wants palatial hotels and fashionable society he can choose Bordighera or San Remo, and in no way regret Cannes or Monte Carlo; while, on the other hand, he may find quieter but beautiful satisfying spots in plenty all along the coast from the frontier to Spezia. Their number is even greater than is the case along the south coast of England from Folkestone to Southsea, and to their number they also add the quality of infinite variety of type.

The cheapness of living is of itself sufficient inducement for the present to go and live in Italy, and would speedily repay the expenses of the journey thither. Apart from this consideration, however, the people who need particularly to be converted, in their own interests, to a belief in the wisdom of visiting the Italian Riviera are those who have already determined to run down to the French coast, as in pre-war days, to seek the delights of the southern sun.



The Empress's Walk at San Remo.

To such as these there is no need to debate the question of whether the long journey from England is worth the while. If they are bound for Monte Carlo or Mentone, in any case, the question of entering Italy or not is simply one of providing themselves with an Italian *triftyque* and *visa* in advance, and travelling a dozen miles or so farther. They will be passed quickly through the frontier, and their *triftyques* will be stamped with a permit to buy petrol anywhere, and in any quantity on main routes; in which case they will be better off than the Italian motorist himself, for he is rationed.

A few hours at Bordighera will convince them that Italy is not a country of Bolshevik turbulence, of food scarcity, or of anti-British tendencies; there is a resident British colony at this well-favoured resort, so famous for its flowers and palms, and the true facts as to internal conditions in the country generally can speedily be gathered.

The next place along the coast—Ospedalleti—offers the serenest quietude, in conjunction with fine hotels, and then comes San Remo itself. One does not know which to admire the most—its splendid situation, its palatial hotels, or the attractiveness of its unique old town that lies behind. No one who leaves England with San Remo as an objective need fear disappointment; it is assuredly a blessed spot.

If the tourist can eventually tear himself away, he will find fresh beauties all along the coast. But first of all he must not fail to run a couple of miles inland to see Taggia, where the violet is cultivated with wondrous prodigality. The little town is full of interest, and is centred in a lovely valley.



A reminiscence of the war: A Vauxhall 'mid the mountains.

THE MOTOR-OWNER

March, 1921

One can only pick out some of the most desirable towns along the Riviera di Ponente for special mention—Oneglia, Alassio, Noli, and Savona, for example, among a perfect galaxy of beauty spots. In winter and spring they offer every attention to the Englishman by reason of their climate, while in summer they are also much frequented for bathing purposes.

Eventually one comes to Genoa, which as a large town may offer a change of attraction for a time. But not far away, on the eastern side, one enters upon a new world of

is 24 kilometres; Alassio is 53 kilometres farther, Genoa another 99 kilometres. From Genoa to Spezia another 108 kilometres. The total length of the Ligurian Riviera, which is sub-divided into the Ponente and the Levante, is therefore 284 kilometres—or 176 miles. In spite of the innumerable level crossings *en route* and the bad roads in the environs of Genoa, the car can beat the train, if need be, and also avoid the plethora of tunnels. But it is not a journey to be scorched over, even if the roads were one long track of perfect surface; the car is more a convenience to carry one *en plein air* from one paradise to another, with as long a stay as possible at each, and with potent inducements at almost every point to go no farther. Only foreknowledge, in fact, of what lies beyond, can tempt one to move at all.

P.S.—Since the foregoing was written, we have seen a statement to the effect that there has been a considerable influx of visitors to Bordighera during January and February, and that accommodation is difficult to obtain, and that hotel-keepers have advanced their prices accordingly. In the circumstances this is hardly to be wondered at, and no doubt the same state of things may prevail in other resorts to a degree at San Remo, though the congestion can hardly be so great. It must be pointed out, however, that these two resorts are only a short way over the border from France, and that many people may have been driven thither who had hoped to find living at a reasonable rate on the French side. The influx has extended all along the Ligurian coast can only be regarded as highly improbable, and it is even more unlikely that there has been any pronounced raising of prices by Italian hotel-keepers generally. But when this is said and done, the difference in the exchanges is so considerable that Italy would still be vastly cheaper than France even if the Italian hotel-keepers had advanced their charges by a hundred per cent.

C. L.



A corner of the harbour at Rapallo.

attractiveness—the Riviera di Levante—and at Portofino, Santa Margherita, or Rapallo, the visitor will perhaps wonder why he did not head for this region at the outset. The views obtainable from the Vetta (formerly known as the Kulm), above Portofino, are the finest of their kind in Europe; there is nothing so expansive or majestic anywhere away from the Alps.

Every variety of hotel is available in this district, but even at the most palatial the cost of living is relatively cheap. As for the smaller places, of which there are many still further along the coast—e.g., Zoagli and Sestri Levante—one can live comfortably at 25 lire a day! Among other picturesque spots east of Genoa which may be indicated are Camogli, Nervi, and Paraggi, but they are far from exhausting the list.

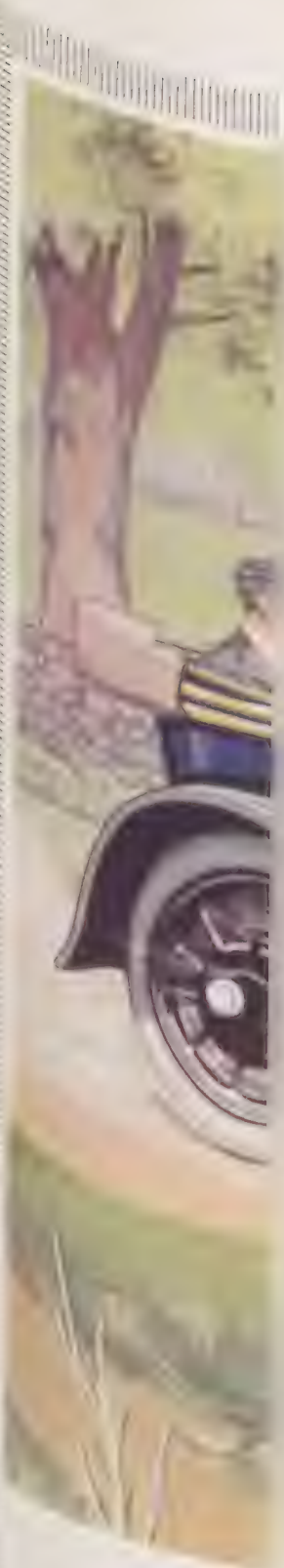
And, finally, if one is journeying by road one has a magnificently picturesque experience before one in travelling to the limit of the Riviera di Ponente at Spezia. The railway runs along the sea, but mostly through tunnels, whereas the road rises high above the coast beyond Sestri Levante and is carried over the Passo del Bracco (2,000 ft.), and eventually runs down to the sea again at Spezia's famous harbour.

As regards the distances to be covered, it may be stated that from the Italian frontier (3 kilometres beyond Mentone) to San Remo

is said and done, the difference in the exchanges is so considerable that Italy would still be vastly cheaper than France even if the Italian hotel-keepers had advanced their charges by a hundred per cent.



Camogli, on the west side of the Portofino peninsula.



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Page 111



THE "WOLSELEY" FIFTEEN

"The Car that Combines Power with Economy"

THE REAL ANSWER to increased taxation and expensive petrol is provided by the new "Wolseley" FIFTEEN. Its extremely efficient overhead-valve engine gives one a sense of unlimited power either on hills or on the level, yet it is only rated at 15.6 h.p., and has a correspondingly low fuel consumption. On the roads of England, Scotland or Wales it will hold its own with the fastest touring cars made, no matter what their power may be, and its hill-climbing capacity is really astonishing.

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THE favourite 12 h.p. 4-cylinder Rover has long been an excellent and typical example of British automobile design, and few cars have contrived to ensconce themselves so tightly in the hearts of representative motorists. The reason, of course, is that this car is a delightfully happy medium, being extremely quiet and smooth running, and with a good modicum of speed on occasion, but at the same time being small enough to be light on petrol and light enough to be economical in tyres."

"The Tatler," Nov. 11th, 1920.

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AN UNCONVENTIONAL LIGHT CAR.

A Personal Impression of the 10.5 h.p. Ashton.

TO a potential car owner who desires a vehicle requiring a minimum effort to control, the Ashton should make a particular appeal. The light gear change, clutch, and brake operation, and positioning of the controls, were above criticism, the one exception being the hand brake, to which I will refer later. The chassis construction is rather unconventional, although beautifully simple, and the transverse springing, front and rear, has none of the inherent disadvantages of this type. There is, in fact, an entire absence of roll on corners, and the suspension is altogether delightful.

I was so struck with the almost gliding motion over roads that I knew from previous experience urgently required the attention of our newly formed, if not beloved, Ministry, that I was impelled to glance at the road wheels, and it was difficult to believe that these formed an attachment to the body in which I was so comfortably seated. The only motion conveyed to the occupants was a light see-saw, not at all unpleasant, partially due to the moderate length of the wheelbase.

So far as the control is concerned, I was particularly struck by the gear-change lever, and can endorse the makers' statement that this can be used by the aid of one finger only; further, it requires no skill or practice to make silent changes by reason of the employment of large-faced dogs in the gear-box.

The steering I found to be as untiring as any I have discovered, no effort being required at any time to maintain direction. I should be inclined to attribute this to the front suspension system, which enables the weight of the car to be taken as near as practicable over the wheel centres.

The power unit is the well-known "Coventry Simplex," to which I must pay tribute as being remarkably consistent and capable of developing all the power required at either high or low speeds.

The car was not notably fast, 45 miles per hour being the highest figure that I attained; I will not state that this is the car's maximum, but at least this figure should satisfy the average considerate driver.

The braking was excellent, being positive in action, and, above all, smooth in application; while skidding appeared to have been excluded from the characteristics of the car.

The hand brake, as previously indicated, was an exception to the generally perfect control positions; it was too far forward and out of easy reach. This, I may add, is a small fault and one by no means peculiar to this car.

The general appearance of the Ashton is pleasing, and, by reason of its weight and size, it is a genuine light car. No headlamps or starter are fitted as standard, and although I consider that the former could be fitted with advantage, the latter accessory certainly is not necessary, especially in view of the easy starting ensured by the Atmos carburetter.

I can best express my impression of the Ashton car by saying that it constitutes an ideal lady driver's car. No car of this type passing through my hands has possessed greater delicacy and ease of control than this small but thoroughbred vehicle.

Other points that are of interest include the good technical design, which provides a car fashioned upon stylish lines, coupled with so substantial a weight-reduction as to keep the chassis well below half a ton. A glance at its specification reveals the engine's moderate bore and equally unobtrusive tax, the former's modest dimension being healthily augmented by a stroke of 109.5 mm.

There are, of course, four cylinders, cooled by natural water circulation assisted by a honey-comb radiator. For a light car the road clearance is commendable, at least nine inches, while the 8 ft. wheelbase gives it a welcome handiness.

The clutch is the inverted Ferodo-faced cone pattern, of the satisfactoriness of which there is no question, and lubrication is pump actuated. Very commendable are the gear-box, in that its gears are always in mesh, and the petrol tank, for it follows the sensible practice of having two taps at different levels to ensure a reserve of fuel.

The road wheels are 700 by 80 mm. pressed steel disc, the standard tyres are Dunlops, and a dicky seat is provided. The makers are Ashton Evans Motors, Ltd., Liverpool St., Birmingham.
T. G. S.



Miss Ruby Kimbrey, the well-known actress, at the wheel of her Ashton car.

A Brief Ashton Specification.

Engine	Four-cylinder Coventry Simplex.
Bore	66 mm.
Stroke	109.5 mm.
R.A.C. Rating	10.5 h.p.
Ignition	M.L. mag.
Lubrication	Pump.
Top-gear ratio	4 to 1.
Lighting	Electric.
Gear box 3-speed, central change.	
	Final Drive Bevel.
	Cooling Thermo-syphon.
	Springing Transverse.
	Carburetter Zenith.
	Chassis weight 9½ cwt.

MY LOG-BOOK.—By HERMES.

MR. J. S. CRITCHLEY, the well-known engineer, has made a very favourable report on the Ready Divisible Wheel Rim. He considers it a valuable adjunct to motor vehicles.

TO protect road springs from wet and mud some device such as the Wefco cover is advisable. It is made of leather, with a tongue to retain lubricant, and is in no way unsightly.

SOMETHING new in tyres is rather a problematical venture in these days, but the Palmer Tyre Co. seem to have found their new Persan tyre very satisfactory for sizes up to 875 by 105.

MESSRS. ROTAX, Willesden Junction, N.W.10, are marketing a switch which possesses the advantage of reducing the power of the headlights at the driver's will, a device that is very welcome.

IN their booklet on correct lubrication the Vacuum Oil Co. include a good deal of valuable information on engine and chassis troubles, as well as on points such as the need to clean out crank-cases frequently, and to use a suitable lubricant for the various types of cars or lorries. Copies can be obtained from the firm at Caxton House, Westminster, S.W.1.

MESSRS. SOUTHGATE, LTD., sole concessionnaires for the British Isles for Maibohm & Forster cars, have removed from their temporary address at Knightsbridge to Room No. 40, Regent House, Regent Street, W.1.

CONSIDERABLE reductions are announced in the prices of De Dion commercial vehicles. The new figures will hold for a few weeks, and any alteration that may occur will probably be in the nature of an increase.

MESSRS. LEO. SWAIN & CO., 237, Deansgate, Manchester, inform me that they have now discontinued acting as sole sales agents for the Slough Trading Co. They can, however, supply their clients advantageously from their stock of unused Government disposal tyres.

THE Orpington, a two-seater, is being very widely distributed, the sole concessionnaires, the G.N.U. Motor Co., arranging agencies in this country and overseas. This firm, whose head office is Westbourne House, Westbourne Grove, W.2, handle also the Kingsbury-Junior.

DEPENDENCE tail lamps have for many years been thoroughly satisfactory, and I observe that the makers, J. & R. Oldfield, Warwick Street, Birmingham, are marketing equally well-designed articles, such as driving mirrors in various patterns, and neat brass or plated licence-holders.

THERE is quite a lot to interest one in the leaflet issued by T. Stromwall, 40-42, Queen Victoria Street, E.C.4, describing the Asmo carburetter. If only half the claims made for it are sound it is one of the things motorists have been looking for; and anyhow, not a few seem delighted to have found it.

MORE price-reductions are announced, amongst them being those of the André Citroën, the Morris-Cowley and the Swift cars. Sunbeams and the Albert remain unchanged, in spite of rumours to the contrary, but the makers state that they will refund any drop in price that may occur between now and June 30th next.

THE fourth edition of a handy work *Electricity and the Motor Car*, is now available. Specially written for the amateur motorist by Mr. F. H. Hutton, who has contributed a number of interesting articles on electricity to *THE MOTOR-OWNER*, the book can be obtained from Iliffe & Sons, 20, Tudor Street, E.C.4, price 5s. 6d. net.

DUNLOPS are still popular. At the recent Scottish Show they comprised, it is claimed, 64 per cent. of the motor vehicles.

QUITE a lot of people have sent me booklets such as "Notes on the New Motor Taxation." But they have forgotten to forward notes for the motor taxation.

THE largest cut in motor car prices that has been made since the beginning of the motor industry is announced by Mr. Arthur Bray, 18, Grafton Street, W.1, who holds the sole concession for the Haynes car, a luxury type of American manufacture. He has reduced the price of the 25-30 h.p. four-seater and seven-seater touring models from £1,225 to £850, nearly 30 per cent. The figure includes a year's free taxation.

IN the list of Government awards published recently, Messrs. Gwynne's Engineering Co., Ltd., the well-known engineers, Chiswick, Hammersmith and Vauxhall, were awarded the premier place for excellence of manufacture in connection with the production of rotary aero engines produced by the firm. The second and third highest awards were given to Messrs. H. M. Hobson, Ltd., makers of the carburetter and equipment of the 11'9" Albert.



Lady de Trafford chats with the Master of the Warwickshire Foxhounds.

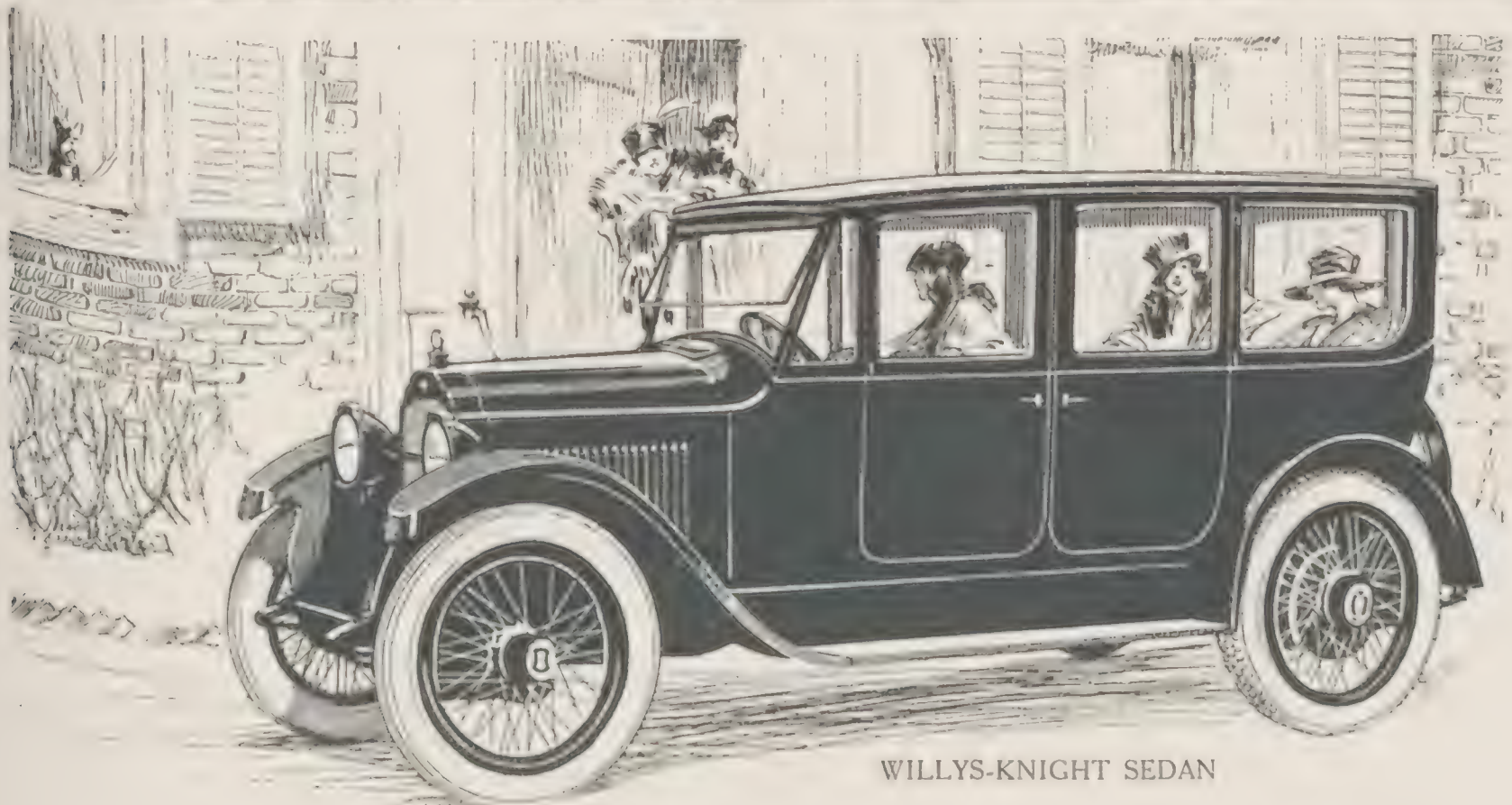
THE Junior Car Club inform me of the following provisional dates for the 1921 programme:—Opening rally, March 5th; Fuel Consumption Trial, April 23rd; Brooklands Spring Meeting, May 28th; Harting Hill Climb, June 18th; Gymkhana, July; Brooklands Autumn Meeting, September 10th; General Efficiency Trial, September 28th or October 1st. A closing rally will be held, the date of which will be decided later, and it is also the intention of the Club to hold a number of social events this year.

THE Automobile Association is taking an active part in the Parliamentary by-election in Cardiganshire, and held a meeting at Aberystwith of motor owners using all descriptions of motor vehicles. With a view to strengthening the representation of motoring interests in the House of Commons, and the organisation of a motoring vote, the candidates have been asked for signed pledges on such questions as the revision of the present system of taxation, the reinstatement of adequate motor spirit, the provision of adequate supplies of motor spirit at reasonable prices, etc.

THE R.A.C. issue a very interesting statement respecting the cause of motor car troubles, based on several thousands of cases they have dealt with on their "Get You Home" scheme. Engine trouble was prominent, ignition faults averaged one in every five cases, the carburetter seldom caused a stoppage. Lubrication was responsible for one in fourteen cases, nearly always traceable to neglect, while faulty back-axes were practically twice as numerous. Clutches and universal joints also proved faulty far too frequently—again by neglect of attention; while valves, being only 6 per cent. of the total, gave the least trouble of all.

THEIR many friends will be interested to hear of the new position to which Messrs. E. J. Mitchell and S.A. Parsons have been appointed. Mr. Mitchell, who was late manager and director of the Palmer Tyre Co., has joined the staff of the North British Rubber Co. (Clinchers) as pneumatic tyre sales manager for the British Isles, and Mr. Parsons has stepped into his place at Palmer's. Another gentleman formerly associated with Clinchers, Mr. Ernest Gelder, who is now managing director of the British side of the F.N. motor business, writes in reference to future prices. While he does not see any chance of being able to reduce prices before July 1st, he is willing to guarantee to give to owners of 1921 F.N. cars purchased from his firm or its agents the benefit of any reduction which may be made between now and July 1st.

WILLYS-KNIGHT



WILLYS-KNIGHT SEDAN

SPEAKING only of externals, the Willys-Knight is a car of infinite grace and beauty. But that is not all. Many fine cars have graceful bodies. The real heart of the motor car is the engine, and in that test the silent sleeve-valve Willys-Knight has no competitor. The ordinary engine deteriorates with use, **the sleeve-valve engine improves with use.** Its adjustment needs are negligible, its economy one of the marvels of the motor age.

Willys-Knight Booklet on request

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WILLYS-KNIGHT SLEEVE-VALVE ENGINES "IMPROVE WITH USE"

SWANLITE

Electric Lighting Plants

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SEE PAGE XIII

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4 CYL.

AND

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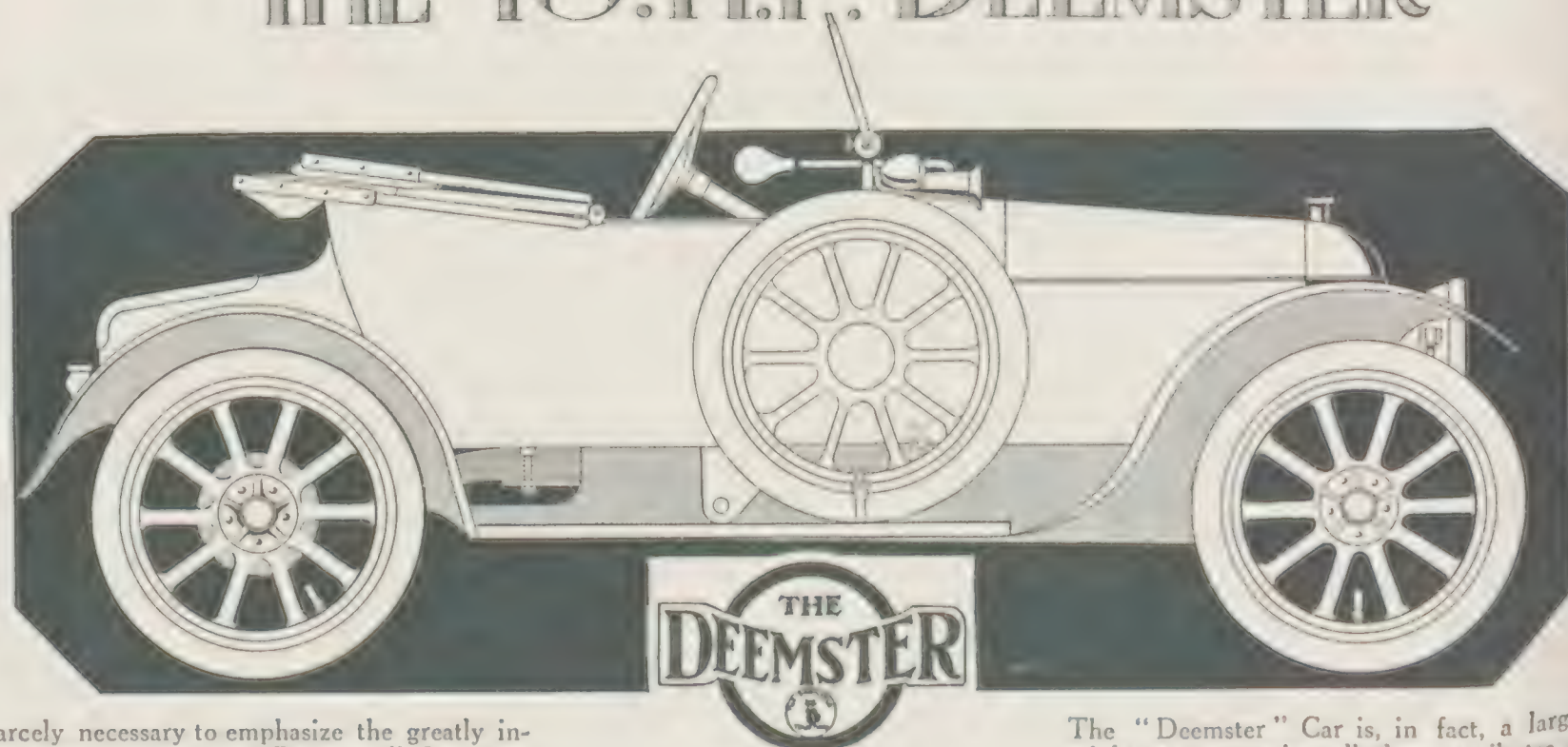
MAGNETOS 4 & 6 CYLS. FOR DUAL
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AS FITTED TO ALL THE
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THE FRANCO-BRITISH AGENCIES
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THE 10.H.P. DEEMSTER



It is scarcely necessary to emphasize the greatly increased reputation that the "Deemster" Cars now hold in the popular esteem. The successes of the Cars in the South Harting Hill Climb and the General Efficiency Trials of the Junior Car Club, the two classic events of last season, but confirm and further attest their value.

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Car prices	
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was obtained
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We have endeavoured by our illustrations, gear-change diagrams and descriptions to make the driving of any one of these eight cars an easy matter even for the novice, and if any reader desires more detailed information we shall be pleased to supply it through "The Motor-Owner" Enquiry Bureau. We would point out, however, that knowledge of which lever to manipulate and how to use it is not quite all

THE BRITISH ENSIGN

The British Ensign, being a "big beast" in comparison with the Ruston-Hornsby, and having a much greater reserve of power, is simpler to drive so far as gear-changing is concerned, but it has considerable and somewhat deceiving speed capabilities, and so it is more than ever advisable to go carefully at first. The instrument board, while being complicated, with admirable neatness and the multiplicity of dials is not so fearsome as it looks. Note the unusual type of controls on the steering wheel, in place of the more stereotyped pair of levers. The two knobs serve the usual purpose of controlling throttle and ignition. The gear-box, with right-hand control, is a three-speed affair, the various positions being as shown in the diagram.

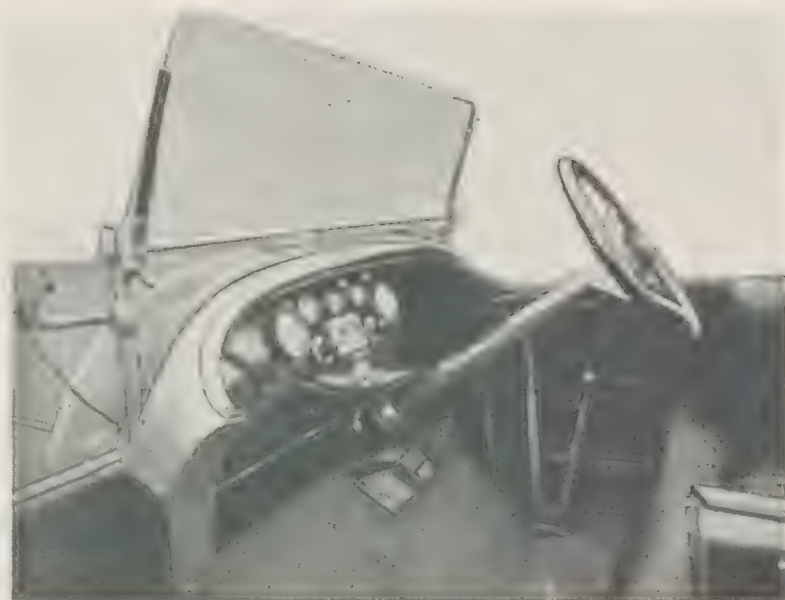


HOW ON

We propose in the course of time to illustrate British cars. Obviously, only a few can be dealt and useful as the first, published in our Oct essential items of control, the levers, switches and

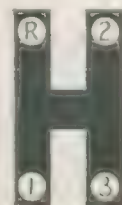
THE RUSTON-HORNSBY

There is not much to worry about on the Ruston-Hornsby dash; the simplicity of bare essentials is refreshing and reassuring. But the change may be used to. The ever, is simple: and back; 2nd, and forward; side back. Re- is inside for- this car es- should advise that the "revs." be kept up by intelligent use of the gear lever if the best results are to be obtained.



THE ASHTON

This car is smaller than either of the two previously mentioned vehicles, and this again has a centrally-placed gear-change. The difficulty of manipulating the lever, however, is mainly imaginary; after a few minutes' use one is quite at home in using the left-hand to control the change. It will be noted that throttle and ignition levers are absent from the steering wheel, the screw-down knobs on the dash, seen through the arms of the wheel, taking their place. The instrument board, another instance of comparative simplicity, carries besides an engine switch, speed and oil indicators and a Smith lighting switch-board. The hand brake does not suffer from the common fault of inaccessibility which too often mars the value of a central position for the lever. The designed to provide plenty



Particular and the (seen in the board) gently and any car, cooled, as to gear-change since the speed is back

No little "joy" attribute The L known to suffice it to frictionally judgment is no damage change. that the for every

S THEM.

points concerned in the driving of well-known that this second instalment will prove as popular are much alike in the possession of certain ly, and each car has an individuality of its own.

THE STANDARD

This is one of the easiest cars to drive that we have yet encountered; it has, however, an ordinary gate and the rules for gear-changing that apply to all conventional cars served. The instrument board is as it is possible whole of the centre a large recess parcels may be shopping experience remarkably efficient hood and swinging side-curtains, and its trouble-less manipulation the car is ideal for the feminine owner-driver.



there is to the driving of a motor car. There is an intuitive understanding of a car's "ways," and an equally intuitive ability to forecast the future movements of the vehicles, pedestrians and other animals to be met with on the road that is only gained with experience—and, alas, not always then. Consequently, our final advice is: Go easy just at first until you know your car and have confidence in yourself.



THE SCOUT

British cars are not as a rule difficult to understand provided one has an elementary knowledge of automobiles, and the Scout is an excellent example of their characteristic sturdiness and simplicity. The gear-change and hand brake controls are on the right, with the electric horn just above them; the dash carries no instruments, and even the steering wheel is small and simple. The gear-change is only point to that the safety in advertently putting the lever into the bottom gear position, as otherwise the reverse may be engaged by mistake. In our experience, however, first speed will be wanted seldom, the most used speeds being third and fourth, which, as the diagram shows, are respectively forward and back, next the driver.



THE NAPIER

The Napier is another car which, by reason of its considerable power reserve and excellent design, is simple to drive, but which, nevertheless, calls for great initial caution. These powerful, super-smooth running cars are deceptive in regard to speed, and although the brakes are good, a sudden emergency is not good for the novice. As to changing speed, it is simply a matter of disengaging the clutch and putting the gear lever into the requisite progressive position to change up. To change down, however, the operation known as double-clutching should be performed. Slightly depress the clutch pedal and put the gear lever in neutral; let the clutch in again and accelerate the engine; disengage the clutch and move the lever to the next downward position, and, finally let in the clutch again. It takes long to tell, but in moment in practice, an operation that is a matter of a and is, moreover, is worth learning.



THE CAR THAT EVERY WOMAN WANTS.

We are rather inclined to think that Boadicea asks for a good deal. However, let the reader judge.

WHAT every woman *knows* may be a mystery solved only by such persons as Sir James Barrie and the painter of Monna Lisa, but what every woman *wants* is perfectly plain. This is not a riddle, and the answer is not a lemon, but a motor car. Perfectly obvious, as you see. It is when we come to the kind of motor car and the special features and gadgets a woman hankers for that the trouble begins.

To begin with, the woman who really knows her own mind—and she does exist—wants a hybrid beauty on wheels. In her dreams she pictures a car with the flowing lines and the refined distinction of a high-class limousine. She wants smartness, comfort and a general six or eight cylinder effect combined with a mileage of something like fifty to the gallon. What is the use of a high-powered car if one cannot afford to run it? For a drawing-room ornament it is too unwieldy—a grand piano that one cannot play is quite enough in that line. Even the personal advertisement acquired by keeping a car standing at the kerb outside one's door is a somewhat high-priced indulgence, especially since it implies the inclusion of a chauffeur to act watch-dog. The cynical mind might entertain visions of theft and subsequent insurance money, but that is not everybody's game.

The car, then, must combine a high-powered appearance with economy in running. Nor must appearance be utterly deceitful. So long as hills exist no woman will wish to risk the ignominy of sticking fast half-way up a slope or even to crawl up laboriously on first speed what time the hill climbers of her friends and acquaintances shoot by her to an accompaniment of silent jeers. Not necessarily silent jeers, either, if the passer-by takes the shape of a char-à-bancs.

All Things for All Weathers.

Another feature is seating capacity. When driving alone, a woman does not want to look like a solitary pea in an overgrown pod. On the other hand, she wishes, when the spirit moves her, to be able to carry four or five friends without suggesting the housing problem of a sardine box or the strap-hanging acrobatics of motor-bus passengers during the rush hours. There must also be ample provision for luggage, and this, of course, must be achieved without detriment to smartness—no effect of the usual overloading or after-thoughts involving the use of cord. A woman does not want her car forcibly to recall a gipsy caravan on the trek, with its swinging buckets, birdcage and miscellaneous collection of oddments.

The car, too, must be equally suitable for fine or wet weather, but in neither case must it convey the slightest impression of makeshift. In wet weather it must seem built for wet weather work, while on a sunny day no one should be able to infer from its appearance the faintest expectation of rain. Her car, a woman considers, should have all the elegance of her *en-tout-cas* umbrella sunshade, equally smart in rain or shine. She also wants the upholstery to be smart, serviceable and luxurious, and of a shade becoming to her complexion and whatever colour-scheme she may choose for her clothes. It does cramp one's style to have to consider one's car when ordering a frock or buying a hat.

A self-starter is, of course, a requisite. Temper-trouble almost invariably attends the cranking up of a car not so

provided, particularly in cold weather. The self-starter must be so placed that when one takes one's dog for an outing, he cannot easily sit on or against it. Some dogs unaccountably prefer the floor to the seat, and little things like the self-starter, the clutch or the accelerator must not be allowed to get in their way. At the same time these objects, while easily accessible to the driver, must leave abundant space for the little comforts and luxuries beloved by every woman.

The Case for Vanity.

First and foremost of these is a mirror in which the woman who drives her own car can really see her face and her hat as well—not merely an eye at a time or a corner of her mouth. Some manufacturers seem to think that the mirror showing following traffic is quite sufficient for purposes of vanity as well. But it is not. And, speaking of vanity, there is the vanity case containing powder and powder puff, cold cream, lip-pencil, eau-de-cologne, pins and hairpins. This should be in ready proximity to the mirror and so arranged that it can be opened and the contents used with one hand. It is not wise to abandon the steering-wheel to its own devices, even for so short a space as is required for powdering one's nose. A convenient receptacle for maps, driving licence, etc., goes without saying, but quite as important is a pocket for engagement book and shopping list, a cigarette box, and both a lighter and a match box—one never knows.

Fool-proofness is a most essential quality. Some women may be first-class mechanics, but a great many, also, are not. It would be of incalculable assistance to the amateur driver if each part of the engine were plainly labelled with its name. It is disconcerting to find that one has removed a compression cap under the impression that it is a sparking plug, or to mistake a mushroom valve for the carburetter. It is equally unfortunate, through a confusion of ideas, to deluge the petrol tank with oil or to attempt to cool the red-hot cylinder with a refreshing bath of petrol. The ideal car will be so constructed that the ambitious amateur motorist of little knowledge and less experience may be able to tinker at it to her heart's content and to the amazement of all beholders without achieving any serious damage.

Little Things that Matter.

Other things that a woman wants on her car are tyres as easily removed and replaced as a pair of gloves, gears that under no circumstances will allow themselves to be stripped, brakes that operate all but automatically at the slightest touch, and a horn that while waking the echoes is hardly audible to the occupants of the car. She would also like a clock that really keeps time, and springs that while sufficiently resilient do not bounce one about like a demented game of cup-and-ball if the car happens to strike a rough bit of road.

The car that every woman wants will require no one to lie under it in case of trouble, so neither a mat for reclining purposes nor a mask to deflect grimy drops of oil will be needed. It is hardly necessary to mention such accessories as an electric foot-warmer and a reading light; the woman who drives herself does not need them, and she who envisages herself only in the rôle of passenger takes them for granted in a car after her own heart.

BOADICEA.

TO OUR READERS.

CHANCE sales and chance purchases are satisfactory to neither party to the transaction, and this is particularly true in regard to "The Motor-Owner." Each issue is available on the bookstalls for a short period only, for the simple reason that within a brief space the stock is exhausted. The result is that those readers who have left their purchase to chance, and have been a little dilatory in not buying the current issue immediately it appears are disappointed. The obvious remedy is to order the journal either from a newsagent or direct from the Publisher, and to simplify the matter as far as possible we print below two forms which, duly completed and forwarded, will ensure the regular receipt of "The Motor-Owner."

As we have pointed out before, it is of great advantage to the Publisher of a journal so expensively produced as "The Motor-Owner" to have an approximate idea of forthcoming requirements, in order that the happy medium between costly waste on our side and widespread disappointment on the part of readers may be struck.

Our anticipation of a record demand, for the February and March issues, happily, was justified, and we believe that we were better able to meet that demand than usual. Readers have helped us to make an estimate in the case of the March Number, and we hope that they will continue to do so for the future.

THE PUBLISHER.

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SAMUEL PEPYS, MOTORIST:

He doth learn the inwardness of his auto-coach and is vastly comforted.

MARCH 9th. Awake betimes and to my new-fangled coach that goeth of its ownself. It is wondrous speedy and most easily controuled, and I and the dogg did drive to White Hall, I intending to call upon the Minister, Mr. Chamberlayne. But, alack! something did go awry, and amid the jocosities of fellows of the baser sort I had perforce to leave the coach in safe custody and return a-foot.

Musing on my ill-fortune, I went to the Temple to my cozen Roger, who tells me that he is afeard I shall allways be unquiett till I learn myself the gutts—for so he did term it—of my new Auto-Coach. At first I did think him a fool, he me giving advice to go for knowledge to THE MOTOR-OWNER. As if a journall's comicall talk be of advantage to me. So, vexed in my mind, I left him without more ado.

So home to dinner with my wife, and after dinner to my tryangle, where I found that above my expectation Lysbeth, the merry jade you wot of, has very good principles of eating, and can take out a lesson herself with very little pains.

To my office, but little work, I greatly exercised in my head over my ill-luck. And so to bed.

To my office. Home to dinner betimes, whither I and by comes my cozen Roger, this being my feast, in part of what I should have had a few days ago for my cutting of the stone, for which the Lord make me truly thankful. My merry at, before, and after dinner, and the more for that my dinner was great, and most neatly dressed by our own only mayde. We had a fricasee of rabbits and a great dish of a side of lambe, a dish of roasted pigeons, a dish of four lobsters, three tarts, a lamprey pie (a most rare pie), a dish of anchovies, good wine of several sorts, and all things mighty noble and to my heart's content. After dinner to Hide Parke, Roger being gone in haste to the Parliament about the carrying this business of the Auto Tax, in which it seems there is great contest on both sides. Here about an houre and home, and I found the house as clear as if nothing had been done there the day from top to bottom, which made us give the cooke-ward 12d. apiece, each of us.

12th. To office and thence to Chamberlayne, with

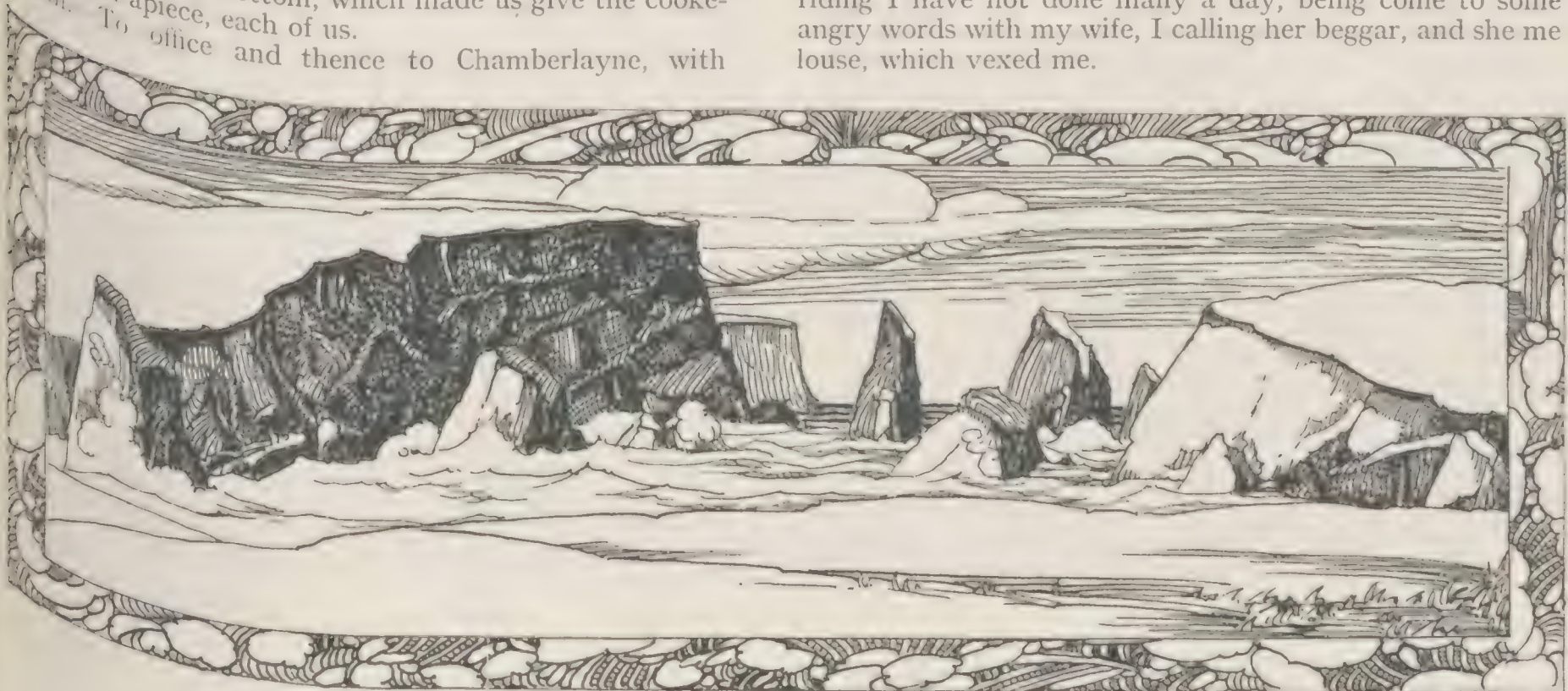
whom did hold much speaking, with prodigious heat, he affirming the Taxe is advantageous and of necessity, I not never apprehending his apology. After a great while in great dudgeon I rose away and did enquire of them at Faynum House whether they could not come at some contrivance to save us from this hurt. Had speech there of one Lord Stennson, an able man and uprightt. Was vastly comforted and did once more hope.

13th.—Over the water to a Taverne, where did take occasion to take the ayre and to have speech of Mr. Pepper, he being, as I presently found, Comptroller of the journall aforesaid. It I presently made an end of reading, wherein is fine observations and precedents, out of which I do purpose to make much benefitt. Home a bit and eat a bit, and anon to work a bit at my auto, which did fyre straight off. Lord! how usefull that journall is, I to-day being master of my new coach, of which I shall not never have sufficient. Did find the garage folk had greatly botched my coach, and in a great heat I did with great pains force back myself from a law sute, and it costing me four half-crownes. And so to dinner, which was neatly dressed, and anon, after reading my vows, being sleepy, without prayers, to bed, for which God forgive me!

17th.—Had speech betimes of Sir Herrick anent the newe impost, to which he hath sent his concurrence wholly, which, he affirms, gives great content, but I am not glad of it. I do remember him of those whose speaking against it was most prodigiously heated. So, in a very angry, pettish mood, I staid a little, and so good-bye.

At dinner was Mr. E——, a cozen of my wife's, all dinner, and walking in the garden all evening, he and I talking of my auto-coach, he being known to be a man of candid and open dealing, without any private tricks or hidden designs, such as other men commonly have in what they do. It is very pleasant to hear how he rails at the rumbling and ado that is in London, and that he cannot endure it. But, Lord! what a stir he makes with his being crowded in the streets and wearied in walking in London, and would not be wooed by my wife to go to a play.

So to bed very weary, and a little galled for lack of riding I have not done many a day, being come to some angry words with my wife, I calling her beggar, and she me louse, which vexed me.



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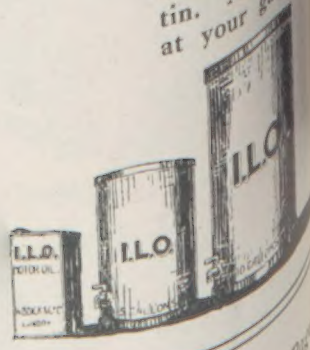
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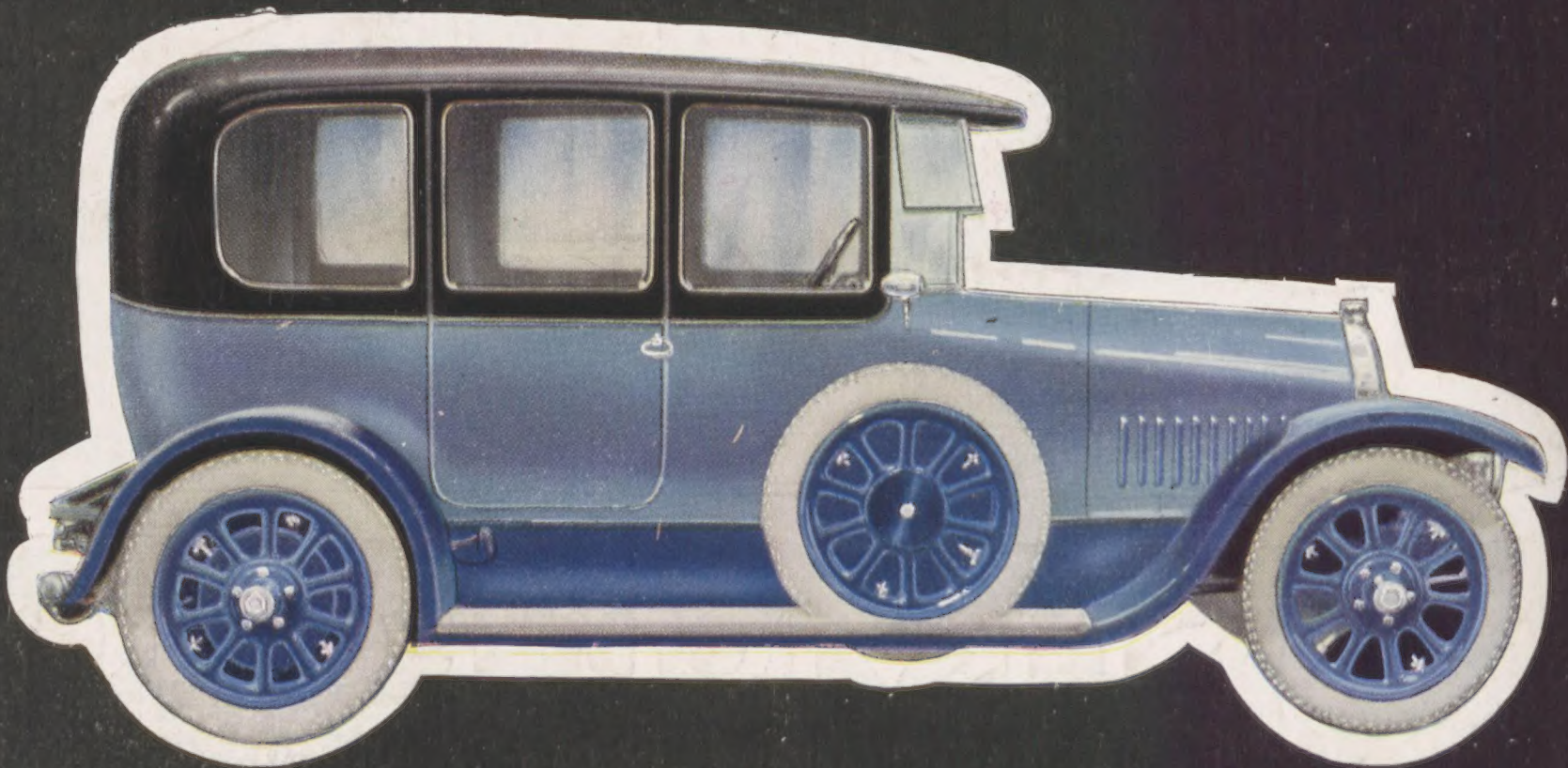


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NATIONAL FUEL ECONOMY.

We are able to include at the last moment the approved regulations for the Royal Automobile Club's National Fuel Economy Trial, which will be held throughout the country on May 7th, 1921. These regulations are printed below and published as a Supplement to the March "Motor-Owner."

ROYAL AUTOMOBILE CLUB.

National Fuel Economy Trial—1921.

(To be held under the Open Competition Rules of the R.A.C., and these Supplementary Regulations.)

SATURDAY, 7th MAY, 1921.

OBJECT. The object of the trial is to demonstrate the possibility of obtaining greater fuel economy in the use of a car than is at present generally the case. This greater economy may be obtained by various methods, such as (a) a more economical adjustment of the carburettor with very slight depreciation of the car's performance; (b) greater skill in driving; and (c) the fitting of auxiliary devices, such as extra air valves. The last-named method is obviously only of economic advantage when the saving achieved justifies the expense of the fitting.

REGULATIONS.

- (1) **Under Open Competition Rules.**—The trial will be under the Open Competition Rules at the time being in force, and under these Regulations, which shall be supplementary thereto.
- (2) **Control and Place.**—The trial is organised by the Technical Committee of the Royal Automobile Club, which is responsible for the Regulations and their interpretation. The trials will be held simultaneously on one and the same day at various centres throughout the country, and the local conduct of the trial will be in the hands of the local organisation, hereinafter called the District Committee.
- (3) **Nature and Length of Trial.**—The trial will take the form of a fuel-consumption test of not less than 40 miles and not more than 60 miles, on a circular route on the public road.
- (4) **Basis of the Competition.**—The basis of the competition is fuel-consumption. The judges when making the awards will take into consideration weight, type of body, nature of route, the use of a special device or fuel energiser and ability to start from cold.
- (5) **Entrants.**—The trial will be open to all comers whether members of an Automobile Club or not. Entries will be received from individuals only, who may each enter only one car. Entries must be made in duplicate upon the prescribed entry-form, copies of which may be obtained from the Secretary, Royal Automobile Club, Pall Mall, London, S.W.1, or from the Secretary of the local Automobile Club or District Committee.
- (6) **Entry Fees.**—The entry fee for each car will be one guinea, and this amount must accompany the duplicate entry-form, which must be received by the Secretary, Royal Automobile Club, Pall Mall, London, S.W.1, on or before noon, on Saturday, 16th April, 1921. Of each entry fee, fifteen shillings will be allocated to the District Committee concerned.
- (7) **Classification.**—There will be three classes :—
 - Class 1. Cars of which the R.A.C. rating does not exceed 12.
 - Class 2. Cars of which the R.A.C. rating exceeds 12 and does not exceed 20.
 - Class 3. Cars of which the R.A.C. rating exceeds 20.
- (8) **Awards.**—The Club will present a Bronze Medal for the best performance in the trial, and to each competitor a certificate will be issued, giving a record of the car's performance. In addition the Directors of THE MOTOR OWNER will present eighteen cups (valued at seventy-five, fifty and twenty guineas)—three to the com-

petitors using motor spirit, who are placed first, second and third in each class, and three in each class to the competitors using benzol, who are placed first, second and third.

- (9) **Judges.**—The awards will be made by a panel of judges consisting of the Technical Committee of the Royal Automobile Club and one representative from each of the local Automobile Clubs or District Committees.
- (10) **Observers.**—Each entrant will be required to nominate an observer who must not weigh more than 180 lb., and who will not travel on his (the entrant's) car, but will be carried on another competitor's car. The observer must be approved by the local Automobile Club or District Committee, who may refuse a nomination without assigning a reason. The duties of the observer will be to see that the prescribed route and speed are adhered to, that no fuel other than that officially supplied is used, and to make a record of the amount of attention which the driver has to give to adjustments.
- (11) **Special or Auxiliary Fittings.**—An entrant may fit any special device he desires to achieve economy. A full description of such device must accompany the entry-form. The economic advantage (having regard to the cost) of the device will be taken into account by the judges.
- (12) **Fuel Energisers.**—Fuel energisers may be used, but the fuel must be treated under the observation of the District Committee, and the composition and cost of the energiser must be given on the entry-form. Samples will be taken during the trial.
- (13) **Equipment.**—Cars must be normally equipped as for the road, having *inter alia* windscreens, wings, lamps and hoods (or alternatives, such as closed bodies).
- (14) **Speed.**—The trial will be run at an average speed (running time only) of not more than 20 miles per hour, and not less than 17 miles per hour.
- (15) **Weight.**—Cars and passengers will be weighed prior to the trial.
- (16) **Tanks.**—The method of fuel measurement will be to supply a known quantity, run the test, and then measure the quantity remaining, and therefore it will be necessary that the fuel, including that in the whole of the fuel-system (pipes, filters, vacuum tank and float-chamber) can be completely and easily withdrawn. In many cars this is very difficult or impossible with the existing tanks, and therefore any entrant, the fuel-system of whose car is such that the fuel cannot be quickly and completely extracted, must adapt the system or must fit an alternative tank holding at least two gallons, to ensure this result.
- (17) **Fuel.**—The fuel to be used will be purchased by each District Committee, and entrants must specify on the entry-form the fuel they wish to use during the trial. With a view to obtaining more comparable results, mixtures of fuels will not be permitted.
- (18) **Coasting.**—Driving a car with the clutch disengaged and the engine throttled down or stopped, when the car is descending hills, is permitted.
- (19) **Gear Ratios.**—Cars must have the normal gear ratio on top gear that is usual for the make and type of car. In any case no gear higher than 3 : 1 will be permitted. Gear ratios will be checked.
- (20) **Passengers.**—That number of passengers must be carried for which the car has intended seating. Passengers will be weighed. Each passenger must not weigh less than 150 lb.
- (21) **Entrants Responsible.**—It is one of the conditions upon which the entries are accepted by the Club, that the Club shall not be responsible for any damage which may be done to or by a car entered, or its appurtenances, either during the trial or while the car is in the charge of the Club or the District Committee, either by fire, accident or otherwise, nor for the theft of the car or any of its accessories or appurtenances. Cars and their accessories and appurtenances shall at all times be at the risk in all respects of the entrants, who shall be deemed by entering to indemnify the Club against all legal proceedings, costs, and penalties whatsoever relating to, or arising out of, the trial.
- (22) **Damage.**—Any damage caused by any entrant or his driver, representative or servant, at any time, and whether before, during, or after the trial, shall be paid for by such entrant.
- (23) **Advertisements.**—Each competitor agrees by entering, that any advertisements he may publish in connection with the trial, or which may be published on his behalf, shall be true and accurate, and shall be submitted in duplicate to the Club for approval, and that such approval in writing shall be obtained before publication.
- (24) **No Claims against the Club.**—A competitor by entering or by driving waives any right of action against the Club or District Committee for any damages sustained by him in consequence of any act or omission on the part of the Club or District Committee, or of its members, or representatives, or servants, whether with respect to these regulations, or in any manner arising out of, or in connection with, the trial.